DIMENSIONAMENTO ECONÓMICO DE CIRCUITOS HIDROELÉTRICOS

Uso da Programação Dinâmica

ECONOMIC SIZING OF HYDROPOWER CIRCUITS

Use of Dynamic Programming

Vítor RIBEIRO

Engenheiro Civil, EDP Gestão da Produção de Energia, S.A.

Pedro NEVES PINTO Engenheiro Civil, EDP Gestão da Produção de Energia, S.A., membro APRH nº 1419

Maria João CONCEIÇÃO

Engenheira Civil, EDP Gestão da Produção de Energia, S.A., membro APRH nº 1370

RESUMO: A determinação das dimensões transversais de um circuito hidroelétrico é geralmente efetuada recorrendo à minimização da soma dos encargos totais associados à sua construção com os encargos referentes às perdas de energia, ambos atualizados a uma data de referência.

Em circuitos hidráulicos com extensão reduzida, o peso significativo do custo do equipamento hidromecânico da tomada de água bem como a importância das perdas de energia correspondentes às transições de secção, impede a otimização recorrendo a métodos correntes, uma vez que a função objetivo contém parcelas cuja quantificação depende de mais do que uma das grandezas a otimizar.

Assim, a resolução do problema requer a utilização de métodos de otimização de funções de múltiplas variáveis e a sua característica sequencial, inerente à quantificação dos encargos totais que constituem a função objetivo, torna adequada a utilização de um algoritmo de Programação Dinâmica.

Para além da descrição geral dos conceitos subjacentes aos algoritmos de Programação Dinâmica, apresentar-se-á a sua aplicação prática em alguns dos casos de estudo mais interessantes.

Palavras-chave: Hidroeletricidade; Dimensionamento económico; Programação dinâmica.

ABSTRACT: The cross sectional sizing of an hydropower plant hydraulic circuit is usually performed through the minimization of the sum of the total construction costs with those related to energy losses, both discounted at a reference date.

In hydraulic circuits with reduced length, the significant weight of the hydromechanical equipment costs of the water intake as well as the significance of the head losses due to section transitions, are not compatible with the use of current optimization methods, since the objective function contains components whose quantification depends on more than one of the quantities to optimize.

Thus, it requires the use of multivariable optimization methods and their sequential character, inherent to the quantification of total costs which is the function to optimize, makes appropriate the use of a dynamic programming algorithm.

In addition to the description of the concepts underlying the Dynamic Programming algorithms, its practical application in some interesting case studies is presented.

Keywords: Hydropower; Economic sizing; Dynamic programming.

1. INTRODUÇÃO

O critério usual para fixação das características geométricas de um circuito hidráulico em Aproveitamentos Hidroelétricos (AH), no que se refere às suas dimensões transversais, tem como objetivo a minimização da soma dos encargos totais envolvidos (construção e perdas de energia) associados à obra, atualizados a uma data de referência.

Em circuitos hidráulicos sob pressão com extensão reduzida, a otimização das suas dimensões transversais não é possível com recurso aos métodos correntes, uma vez que a função objetivo (expressão a minimizar) contém parcelas cuja quantificação depende de mais do que uma das grandezas a otimizar.

De facto, as condições geológicas e topográficas assim como as pressões a que irá estar sujeito o circuito hidráulico levam frequentemente à necessidade de considerar trechos com revestimentos diferentes, nomeadamente em betão e em aço. Às transições entre essas zonas de características diferentes estão associadas perdas de energia cujo peso nas perdas de energia totais não pode ser considerado desprezável, dependendo o valor dos encargos com as perdas de energia nas transições, simultaneamente, das dimensões das secções contíguas e do seu comprimento.

Por outro lado, o significativo peso relativo do custo do equipamento hidromecânico da tomada de água (comportas de guarda e ensecadeiras), bem como a importância relativa das perdas de energia correspondentes às transições associadas, justifica a sua inclusão na otimização global das dimensões.

Assim, se por um lado a abordagem do problema implica a utilização de métodos de otimização de funções de múltiplas variáveis, por outro, a característica sequencial inerente à quantificação dos encargos totais que constituem a função objetivo torna adequada a utilização de um algoritmo de Programação Dinâmica (Valadares Tavares e Correia, 1986, e Rao, 1979). A aplicação de tal algoritmo à otimização das dimensões de circuitos hidráulicos tem vindo a ser concretizada em diversos AH da EDP, com bons resultados, desde a década de 1990 (Foz Côa (1991), Venda Nova II (1997), Baixo Sabor (2005), Picote II (2006) e Bemposta II (2007)).

2. CARACTERIZAÇÃO DO PROBLEMA

Na Figura 1 apresenta-se o perfil longitudinal do circuito hidráulico de um recente projeto que se afigura como um caso típico de aplicação do algoritmo de otimização tratado no presente texto, adequado ao apoio à descrição e caracterização do tipo de problema em análise.

O referido circuito hidráulico é constituído por um túnel de adução com cerca de 400 m de extensão, constituído por dois trechos: um corrente em betão (cerca de 350m) e outro blindado ao longo de 45 m. Inclui quatro transições de secção com extensões da ordem da dezena de metros: bocal (transição entre a secção da grade de proteção para a secção das comportas); transição retângulo-redondo entre a secção das comportas e a secção corrente em betão; transição entre a secção em betão e a secção blindada e transição entre a secção blindada e a secção de entrada da espiral do grupo.

Uma vez que a secção da entrada do bocal fica definida com base em critérios técnicos de estabilidade da grade e que o diâmetro da secção de entrada da espiral se encontra fixado pelas características dos grupos geradores, resta fixar as seguintes dimensões transversais das obras de adução: a secção de obturação das comportas, o diâmetro característico interior da secção em betão e o diâmetro interior da secção blindada. Estas secções relacionam-se entre si de uma forma sequencial (secção das comportas-secção em betão-secção blindada) através dos trechos de transição cuja definição resulta do processo de otimização a seguir referido.



Figura 1 - Perfil longitudinal do circuito hidráulico.

Este artigo foi apresentado no 12º Congresso da Água e selecionado para submissão e possível publicação na *Recursos Hídricos*, tendo sido aceite pela Comissão de Editores Científicos Associados em 30 de maio de 2014. Este artigo é parte integrante da Revista *Recursos Hídricos*, Vol. 35, Nº 2, 66-76, novembro de 2014.

© APRH, ISSN 0870-1741 | DOI 10.5894/rh35n2-6

A fixação das dimensões longitudinais dos trechos de transição de secção é efetuada com base em critérios associados ao seu adequado comportamento hidráulico incluindo a ponderação ótima das perdas de carga localizadas e contínuas (Levin, 1968) e o cumprimento do previsto nas normas do ASCE (1982).

A função objetivo é definida como a soma dos encargos totais associados à construção com os encargos devidos às perdas de energia incorridas ao longo da exploração do AH. Assim, é necessário, em função das dimensões características a otimizar, identificar, para as obras de construção civil, os tipos de trabalhos envolvidos, estimar as respetivas quantidades e fixar os preços unitários correspondentes e, para o equipamento hidromecânico (comportas, ensecadeiras e blindagens), adotar uma quantificar os seus custos. formulação para Simultaneamente, têm de ser fixados os dados de base para quantificação dos encargos financeiros respetivos (cronogramas de investimentos, taxa de atualização e percentagens para imprevistos) à data de entrada em serviço da central (data de referência).

Para quantificação dos encargos com as perdas de energia utilizam-se as abordagens habituais para o cálculo das perdas de carga contínuas, nas secções correntes, e das perdas de carga localizadas, nas transições de secção, e adotam-se, com base na curva de caudais turbinados classificados, os caudais equivalentes em termos de perdas de energia e de volume turbinado, que refletem a distribuição temporal dos períodos de turbinamento e de bombagem (caso se trate de um AH reversível), atualizando tais encargos à data de referência. Nos pontos seguintes, apresentar-se-á a descrição geral do algoritmo de Programação Dinâmica e a metodologia da sua aplicação a dois casos de estudo.

3. ALGORITMO DE PROGRAMAÇÃO DINÂMICA

Em muitos dos problemas práticos, é necessário tomar decisões sequenciais em diferentes pontos no tempo e no espaço, e a níveis distintos, digamos que para um componente, para um sub-sistema ou para um sistema. Problemas em que as decisões são tomadas sequencialmente são designados problemas de decisão sequencial. Uma vez que estas decisões são tomadas num determinado número de estádios, são também designados como problemas de decisão multi-estádio. A programação dinâmica é uma técnica matemática bem ajustada à resolução deste tipo de problemas, tendo sido desenvolvida nos anos 1950 por Richard Bellman (Rao, 1979).

Quando aplicável, a técnica de programação dinâmica representa ou decompõe um problema de decisão multiestádio numa sequência de problemas de decisão de estádio único, permitindo representar um problema com N variáveis numa sequência de N problemas de variável única, que podem ser sucessivamente resolvidos. Na maioria dos casos, a solução dos N sub problemas é mais simples que a solução do problema inicial. A decomposição em N sub problemas é efetuada de modo a que a solução ótima do problema original com N variáveis pode ser obtida a partir das soluções ótimas dos N problemas simples. É importante notar que a técnica de otimização utilizada em cada um dos N problemas é irrelevante, podendo ir desde um processo de enumeração simples até um cálculo diferencial ou uma técnica de programação não linear.

Quando aplicado à programação dinâmica, um processo de decisão multi-estádio consiste num determinado número de processos simples (de estádio único) que estão ligados em série de modo a que o resultado (output) de um estádio é um dado de entrada (input) do estádio que lhe sucede. Em sentido estrito, este tipo de processo deveria ser designado como um processo de decisão multi-estádio em série uma vez que cada um dos estádios simples estão ligados "head to tail" sem realimentação.

4. APLICAÇÃO AO DIMENSIONAMENTO ECONÓMICO DE CIRCUITOS HIDROELÉTRICOS

No caso descrito no ponto 2, representativo de situações habituais, as dimensões otimizadas foram as seguintes:

- Dimensões da secção de obturação das comportas da tomada de água, l x h;
- Diâmetro característico interior da secção dos túneis revestidos a betão, Db;
- Diâmetro interior da secção blindada, Da.

Em contexto de aplicação de um algoritmo de programação dinâmica ao dimensionamento económico de circuitos hidráulicos, estas dimensões são denominadas variáveis de estado, Xi, e caracterizam os estádios em que o sistema em análise é dividido (Tavares e Correia, 1986, e Rao, 1979).

Neste caso particular de aplicação, as variáveis de estado coincidem com as variáveis de decisão sendo a função utilidade, Ui, em cada um dos estádios, calculada em função das variáveis de estado Xi e Xi-1. Para o estádio i = 1 a função utilidade, U1, só depende da variável de estado X1. Esta função quantifica os encargos com a construção e com as perdas de energia relativas a cada estádio. A função Ui pode ser escrita da seguinte forma:

$$U_i(X_i, X_{i-1}) = T_i(X_i) + S_i(X_i, X_{i-1}) + U_{i-1}(X_{i-1})$$

em que:

$$T_{i}(X_{i}) = Q_{i}(X_{i}) + R_{i}(X_{i})$$

- Ti(Xi) encargos dependentes apenas do valor da variável Xi (estádio i);
- Qi(Xi) encargos com a construção;
- Ri(Xi) encargos com as perdas de energia;
- Si(Xi,Xi-1) encargos com as perdas de energia dependentes do valor da variável Xi (estádio i) e da variável Xi-1 (estádio i-1) - introduz a interdependência entre estádios;

$$U_{i}^{*}(X_{i}) = \min[U_{i}(X_{i}, X_{i-1})]$$

valor mínimo da soma dos encargos com a construção, de todos os encargos com as perdas de energia (dependentes apenas do valor da variável Xi (estádio i) e dependentes do valor desta e da variável Xi-1 (estádio i-1)) e da mesma grandeza relativa ao estádio anterior (i-1). Para i = 1 será

$$U_1^{(X_1)} = T_1(X_1) = Q_1(X_1) + R_1(X_1)$$

No caso em apreço, para o estádio 1, uma vez fixada a relação entre a altura e a largura da secção de cada comporta, l x h, pode calcular-se, para cada largura da comporta (variável de estado, $X1 \equiv I$), o custo das duas comportas e das ensecadeiras, Q1(X1), assim como os encargos associados às perdas de energia no bocal de tomada de água, R1(X1) – ver Figura 2.



Figura 2 - Funções utilidade.

No estádio 2 a variável de estado corresponde ao diâmetro do trecho em betão (variável de estado. X2 =Db). Para cada valor desse diâmetro podem calcular-se os seus encargos de construção, Q2(X2), e os valores dos encargos correspondentes às respetivas perdas de energia contínuas e às perdas localizadas nas curvas, R2(X2). Calculam-se, igualmente, os encargos com as perdas de energia no quadrado-redondo, S2(X2,X1) = S2(Db,l), dependentes do valor do diâmetro do trecho em betão (variável X2 = Db) e da largura da comporta (variável X1 \equiv l). Esses encargos são somados à função U1*(X1). estádio i-1, obtendo-se os valores correspondentes à função U2(X2,X1), para os valores da variável X1 = l considerados, e os respetivos mínimos, U2*(X2), associados aos valores adotados para a variável $X2 \equiv Db.$

Idêntico procedimento se segue para o estádio 3, cuja variável de estado corresponde ao diâmetro do trecho blindado (variável de estado, $X3 \equiv Da$). Para cada valor desse diâmetro são calculados os respetivos encargos

com a construção, Q3(X3), bem como os valores dos encargos correspondentes às perdas de energia contínuas e às perdas localizadas no cone de transição blindagem-espiral, R3(X3). Calculam-se, igualmente, os encargos com as perdas de energia no cone de transição betão-blindagem, S3(X3,X2) = S3(Da,Db), dependentes do valor do diâmetro dos trechos blindado (variável X3 = Da) e em betão (variável X2 = Db). Esses encargos são somados à função U2*(X2), estádio i-1, obtendo-se os valores correspondentes à função U3(X3,X2), para os valores da variável X2 = Db considerados, e os respetivos mínimos, U3*(X3), associados aos valores adotados para a variável X3 = Da.

A determinação do mínimo de U3*(X3) permite definir a escolha ótima do valor da variável X3 (diâmetro da blindagem, Da), assim como das variáveis X2 (diâmetro dos trechos em betão, Db) e X1 (largura da comporta, l) que conduzem ao referido mínimo, conforme se evidencia na Figura 3.

 | | |
 | | | |
 | | | | E 10.8
 | | | | + | | · · · · · · | 11 |
 | - 2430 |
|---|------------------|--|--
---	---	--
---	--	--
--	--	---
--	--	---

 | | |
 | | | |
 | | | | g 10.7
 | | | | 1 | | | / |
 | - 2420 문 |
 | | |
 | | | |
 | | | | 10.6
 | | | - | 1 | 1 | 1 | |
 | 2410 |
 | | |
 | | | |
 | | | | 10.4
 | | 1 - | 7 | 1 | 1 | 1 | |
 | 2100 8 |
 | | |
 | | | |
 | | | | 2 10.3
 | * | | | | / | 1 | |
 | 2360 |
 | | |
 | | | |
 | | | | 10.2
 | | - | _ | - | 1 | | |
 | 2370 |
 | | |
 | | | |
 | | | | 8 10.1
 | | | | | | | |
 | 2360 |
 | | |
 | | | |
 | | | | 10.0
 | | 1 | Y | 1 | | | |
 | 2350 |
 | | |
 | | | |
 | | | | 3.6
 | 3.9 | 40 | 4.1 | 4.2
uro da comp | 4.3
orta. I (m) | 4.4 | 4.5 4 | 6 47
 | 1 |
 | | |
 | | | |
 | | | |
 | | | | | | | |
 | |
 | | |
 | | | |
 | | | | 8.9
 | | : | | : | 1 | • | |
 | 10560 |
 | | |
 | | | |
 | | | | E 88
 | | | | -+ | | | |
 | 10630 8 |
 | | |
 | | | |
 | | | | 8 87
 | | | | -+ | | + | |
 | 10500 |
 | | |
 | | | |
 | | | | 8.6
 | 1 | | | 1 | | 1 | |
 | 10470 |
 | | |
 | | | |
 | | | | 85-
 | | * | - | 1 | 1 | 1 | |
 | 104405 00 |
 | | |
 | | | |
 | | | | 8 83
 | | | × | | | 1 | |
 | 103802 |
 | | |
 | | | |
 | | | | 82
 | | | > | | | | |
 | 10350 |
 | | |
 | | | |
 | | | | 8.1
 | | | | | | | |
 | 10320 |
Estádio 1			
 | | |
 | | | |
 | | | | 8.0
 | - | - | | | Y | | | -
 | 10290 |
| | | | |
 | U | 1(X1)=Q1(X1 |)+R ₁ (X ₁)
 | | | |
 | | Q1(X1) | R ₁ (X ₁) | 10.0
 | 10.1 | 10.2 | 10.3 | 10.4 | 10.5 1 | 0.6 11
a | 1.7 10.1 | 8 10.9
 | |
X1 ≡ I						
 | | |
 | | | |
 | U ₁ (X ₁) | | |
 | | | Learnatio | un necho en | - Sonao, Dio (m | | |
 | 13616 |
3.8			2405.2			
 | | |
 | | | |
 | 2405.2 | 1746.1 | 659.1 |
 | | | | 1 | Fun | ção objec | tivo |
 | 13,405 |
3.9			2386.0			
 | | |
 | | | |
 | 2386.0 | 1791.9 | 594.1 |
 | | | | | | | |
 | 12,875 |
41			2374.0
 | | |
 | | | |
 | 2374.0 | 1883.6 | 486.3 |
 | | 1 | | 1 | 1 | 1 | | T
 | 19455 |
4.2			2371.1			
 | | |
 | | | |
 | 2371.1 | 1929.5 | 441.7 |
 | | | | 1 | | | |
 | 13450 |
4.3			2377.4			
 | | |
 | | | |
 | 2377.4 | 1975.4 | 402.0 |
 | | 1 | | 1 | 1 | 1 | [] [|
 | 19415 8 |
4.4			2388.0			
 | | |
 | | | |
 | 2388.0 | 2021.3 | 366.7 |
 | 1 | | 1 | 1 | 1 | 1 | [[] |
 | 13410 |
4.5			2402.4			
 | | |
 | | | |
 | 2402.4 | 2067.2 | 335.1 |
 | | 1 | | N 4 | | 1 | 1 |
 | 13395 1 |
4.6			2420.1			
 | | |
 | | | |
 | 2420.1 | 2113.2 | 306.9 |
 | | | | 11/11 | n | | |
 | 13375 |
47			2440.8
 | | |
 | | | |
 | 2440.8 | 2159.1 | 291.4 | 10000000
 | | | 1 | 1111 | | 12 | | Second
 | |
4.7			2440.8			
 | | |
 | | | |
 | 2440.8 | 2159.1 | 281.6 |
 | | | | | | 3 | |
 | 13355 |
4.7			2440.8
 | | |
 | | | |
 | 2440.8 | 2159.1 | 281.6 | 8.0
 | 8.1 | 82 | 83 | 8.4 | 8.5 | 3 | 17 8.1 | 8 8.9
 | 13355
13335 |
4.7			2440.8
 | | |
 | | | |
 | 2440.8 | 2159.1 | 281.6 | 8.0
 | 8.1 | 82 | 8.3
Diàmetro | 8.4
do trecho bil | 8.5
ndado, Da (m | 3 | 17 8.1 | 8 8.9
 | 13355
13335 |
4.7 Estádio 2			2440.8
 | | |
 | | | |
 | 2440.8 | 2159.1 | 281.6 | 80
 | 8.1 | 82 | 8.3
Diămetro | 8.4
do trecho bil | 8.5
Indado, Da (m | -3
16 | 17 8.1 | 8 8.9
 | 13355
13335 |
| 4.7
<u>Estádio 2</u> | | 2.0 | 2440.8 | U
 | 2(X2X1)=Q2 | (X ₂)+R ₂ (X ₂) | +S2(X ₂ ,X ₁)+
 | U1 [*] (X1) | 4.5 | | 47
 | 2440.8 | 2159.1
Q ₂ (X ₂) | 281.6
R ₂ (X ₂) | 8.0
S ₂ (X ₂ ,X ₁)
 | 8.1 | 82 | 8.3
Diàmetro | 8.4
do techo be | 8.5 Indado, Da (m | 3 | 7 8/ | 8 8.9
 | 13365 |
| 4.7
<u>Estádio 2</u>
X₂≡ Db | X1: | 3.8 | 2440.8
3.9 | U
4.0
 | 2(X ₂ ,X ₁)=Q | (X ₂)+R ₂ (X ₂)
4.2 | +S2[X ₂ ,X ₁]+
4.3
 | U1 [*] (X1)
4.4 | 4.5 | 4.6 | 4.7
 | 2440.8
U2*(X2) | 2159.1
Q ₂ (X ₂) | 281.6
R ₂ (X ₂) | 80
S ₂ (X ₂ ,X ₁)
3.8
 | 61
3.9 | 8.2 | 8.3
Diàmetro
4.1 | 8.4
do techo bil
4.2 | 8.5
ndado, Da (m
4.3 | 4.4 | 4.5 | 4.6
 | 4.7 |
| 4.7
<u>Estádio 2</u>
X₂≡ Db
10 | X1: | 3.8
10563.2 | 2440.8
3.9
10538.7 | 4.0
10526.2
 | 2(X ₂ X ₁)=Q
4.1
10521.5 | (X ₂)+R ₂ (X ₂)
4.2
10523.4 | +S2(X ₂ X ₁)+
4.3
10532.1
 | U1 [*] (X1)
4.4
10548.0 | 4.5
10571.5 | 4.6 | 4.7
 | 2440.8
U2*(X2)
10521.5 | 2159.1
Q2(X2)
5740.1 | 281.6
R ₂ (X ₂)
2411.4
2201.0 | 80
S ₂ (X ₂ X ₁)
3.8
6.5
 | 6.1
3.9
1.2
2.5 | 82
4.0
0.0 | 83
Diametro
4.1
0.0 | 8.4
do techo bit
4.2
0.7 | 4.3
3.2 | 4.4 | 4.5 | 4.6
 | 4.7 |
| 4.7
<u>Estádio 2</u>
X ₂ ≡ Db
10
10.1
10.2 | X1: | 3.8
10563.2
10516.7
10478.5 | 2440.8
3.9
10538.7
10490.1
10449.4 | U
4.0
10526.2
10476.4
10434.3
 | 2(X ₂ X ₁)=Q
4.1
10521.5
10471.5
10479.0 | (X ₂)+R ₂ (X ₂)
4.2
10523.4
10473.0
10430.2 | +S2(X ₂ ,X ₁)+
4.3
10532.1
10480.8
10437.3
 | U1 [*] (X1)
4.4
10548.0
10495.2
10450.5 | 4.5
10571.5
10516.6
10470.2 | 4.6
10603.0
10545.4
10496.8 | 4.7
10642.6
10581.9
10530.5
 | 2440.8
U2*(X2)
10521.5
10471.5
10429.0 | 2159.1
Q ₂ (X ₂)
5740.1
5809.6
5879.5 | 281.6
R ₂ (X ₂)
2411.4
2291.9
2179.5 | 80
S ₂ (X ₂ X ₁)
3.8
6.5
9.9
14.4
 | 8.1
3.9
1.2
2.5
4.4 | 8.2
4.0
0.0
0.2
0.7 | 8.3
Diametro
4.1
0.0
0.0
0.0 | 4.2
0.7
0.3
0.1 | 4.3
3.2
1.8
0.9 | 4.4
8.5
5.6
3.5 | 4.5
17.6
12.7
8.8 | 4.6
31.3
23.7
17.7
 | 13355
13335
4.7
50.3
39.6
30.7 |
| 4.7
<u>Estádio 2</u>
X ₂ ≡ Db
10
10.1
10.2
10.3 | X1: | 3.8
10563.2
10516.7
10478.5
10448.3 | 2440.8
3.9
10538.7
10490.1
10449.4
10416.3 | U
4.0
10526.2
10476.4
10434.3
10399.5
 | 2(X ₂ X ₁)=Q
4.1
10521.5
10471.5
10429.0
10393.4 | (X ₂)+R ₂ (X ₂)
4.2
10523.4
10473.0
10430.2
10394.5 | +S2(X ₂ ,X ₁)+
4.3
10532.1
10480.8
10437.3
10401.1
 | U1°(X1)
4.4
10548.0
10495.2
10450.5
10413.4 | 4.5
10571.5
10516.6
10470.2
10431.6 | 4.6
10603.0
10545.4
10496.8
10456.3 | 4.7
10642.6
10581.9
10530.5
10487.6
 | 2440.8
U2*(X2)
10521.5
10471.5
10429.0
10393.4 | 2159.1
Q2(X2)
5740.1
5809.6
5879.5
5949.7 | 281.6
R ₂ (X ₂)
2411.4
2291.9
2179.5
2073.7 | 52(X2X1)
3.8
6.5
9.9
14.4
19.8
 | 6.1
3.9
1.2
2.5
4.4
7.0 | 4.0
0.0
0.2
0.7
1.6 | 8.3
Diametro
4.1
0.0
0.0
0.0
0.1 | 4.2
0.7
0.3
0.1
0.0 | 4.3
3.2
1.8
0.9
0.4 | 4.4
8.5
5.6
3.5
2.1 | 4.5
17.6
12.7
8.8
6.0 | 4.6
31.3
23.7
17.7
12.9
 | 13355
13335
4.7
50.3
39.6
30.7
23.5 |
| 4.7
<u>Estádio 2</u>
X₂≡ Db
10
10.1
10.2
10.3
10.4 | X1: | 3.8
10563.2
10516.7
10478.5
10448.3
10425.6 | 2440.8
3.9
10538.7
10490.1
10449.4
10416.3
10390.5 | U
4.0
10526.2
10476.4
10434.3
10399.5
10371.6
 | 2(X ₂ X ₁)=Q;
4.1
10521.5
10471.5
10429.0
10393.4
10364.4 | (X ₂)+R ₂ (X ₂)
4.2
10523.4
10473.0
10430.2
10394.5
10365.2 | +S2(X ₂ X ₁)+
4.3
10532.1
10480.8
10437.3
10401.1
10371.6
 | U ₁ [*] (X ₁)
4.4
10548.0
10495.2
10450.5
10413.4
10383.1 | 4.5
10571.5
10516.6
10470.2
10431.6
10400.3 | 4.6
10603.0
10545.4
10496.8
10456.3
10423.3 | 4.7
10642.6
10581.9
10530.5
10487.6
10452.5
 | 2440.8
U2*(X2)
10521.5
10471.5
10429.0
10393.4
10364.4 | 2159.1
Q ₂ (X ₂)
5740.1
5809.6
5879.5
5949.7
6020.1 | 281.6
R ₂ (X ₂)
2411.4
2291.9
2179.5
2073.7
1973.9 | 52(X2X1)
3.8
6.5
9.9
14.4
19.8
26.3
 | 81
3.9
1.2
2.5
4.4
7.0
10.5 | 82
4.0
0.0
0.2
0.7
1.6
3.0 | 6.3
Diametro
4.1
0.0
0.0
0.0
0.0
0.1
0.4 | 4.2
0.7
0.3
0.1
0.0
0.0 | 4.3
3.2
1.8
0.9
0.4
0.1 | 4.4
8.5
5.6
3.5
2.1
1.1 | 4.5
17.6
12.7
8.8
6.0
3.8 | 4.6
31.3
23.7
17.7
12.9
9.1
 | 4.7
50.3
39.6
30.7
23.5
17.7 |
| 4.7
Estádio 2
X₂≡ Db
10
10.1
10.2
10.3
10.4
10.5 | X1: | 3.8
10563.2
10516.7
10478.5
10448.3
10425.6
10410.0 | 2440.8
3.9
10538.7
10490.1
10449.4
10416.3
10390.5
10371.5 | U
4.0
10526.2
10476.4
10434.3
10399.5
10371.6
10350. ◆
 | 2(X ₂ X ₁)=Q,
4.1
10521.5
10471.5
10429.0
10393.4
10364.4
10341.8 | (X ₂)+R ₂ (X ₂)
4.2
10523.4
10473.0
10430.2
10394.5
10365.2
10342.0 | +S2(X ₂ ,X ₁)+
4.3
10532.1
10480.8
10437.3
10401.1
10371.6
10348.2
 | U ₁ [*] (X ₁)
4.4
10548.0
10495.2
10450.5
10413.4
10383.1
10359.3 | 4.5
10571.5
10516.6
10470.2
10431.6
10400.3
10375.6 | 4.6
10603.0
10545.4
10496.8
10456.3
10423.3
10423.3 | 4.7
10642.6
10581.9
10530.5
10487.6
10452.5
10424.6
 | 2440.8
U2*(X2)
10521.5
10471.5
10429.0
10393.4
10364.4
10341.8 | 2159.1
Q2(X2)
5740.1
5809.6
5879.5
5949.7
6020.1
6090.9 | 281.6
R ₂ (X ₂)
2411.4
2291.9
2179.5
2073.7
1973.9
1880.0 | 80
52(X2X1)
3.8
6.5
9.9
14.4
19.8
26.3
34.0
 | 81
3.9
1.2
2.5
4.4
7.0
10.5
14.7 | 82
4.0
0.0
0.2
0.7
1.6
3.0
4.9 | 8.3
Diametro
4.1
0.0
0.0
0.0
0.0
0.1
0.4
1.0 | 4.2
0.7
0.3
0.1
0.0
0.0
0.0 | 4.3
3.2
1.8
0.9
0.4
0.1
0.0 | 4.4
8.5
5.6
3.5
2.1
1.1
0.5 | 4.5
17.6
12.7
8.8
6.0
3.8
2.3 | 4.6
31.3
23.7
17.7
12.9
9.1
6.3
 | 4.7
50.3
39.6
30.7
23.5
17.7
13.0 |
| 4.7
Estádio 2
X ₂ ≡ Db
10
10.1
10.2
10.3
10.4
10.5
10.6 | x1: | 3.8
10563.2
10516.7
10478.5
10448.3
10425.6
10410.0
10401.3 | 2440.8
3.9
10538.7
10490.1
10449.4
10416.3
10390.5
10371.5
10359.2 | U
4.0
10526.2
10476.4
10434.3
10399.5
10371.6
10350. ◆
10335.4
 | 2(X ₂ X ₁)=Q;
4.1
10521.5
10471.5
10479.0
10393.4
10364.4
10341.8
10325.2 | (X ₂)+R ₂ (X ₂)
4.2
10523.4
10473.0
10430.2
10394.5
10365.2
10342.0
10324.6 | +\$2(X ₂ X ₁)+
4.3
10532.1
10480.8
10437.3
10401.1
10371.6
10348.2
10330.7
 | U ₁ [*] (X ₁)
4.4
10548.0
10495.2
10450.5
10413.4
10383.1
10359.3
10341.4 | 4.5
10571.5
10516.6
10470.2
10431.6
10400.3
10375.6
10357.0 | 4.6
10603.0
10545.4
10496.8
10456.3
10423.3
10397.2
10377.5 | 4.7
10642.6
10581.9
10530.5
10487.6
10452.5
10424.6
10403.4
 | 2440.8
U2*(X2)
10521.5
10471.5
10429.0
10393.4
10364.4
10341.8
10324.6 | 2159.1
Q2(X2)
5740.1
5809.6
5879.5
5949.7
6020.1
6090.9
6162.0
1000.9 | 281.6
R ₂ (X ₂)
2411.4
2291.9
2179.5
2073.7
1973.9
1880.0
1791.3
170.7
7 | 00
3.8
6.5
9.9
14.4
19.8
26.3
34.0
42.9
 | 81
3.9
1.2
2.5
4.4
7.0
10.5
14.7
19.9 | 82
4.0
0.0
0.2
0.7
1.6
3.0
4.9
7.5
100 | 8.3
Diametro
4.1
0.0
0.0
0.0
0.1
0.4
1.0
1.9 | 4.2
0.7
0.3
0.1
0.0
0.0
0.0
0.2
0.2 | 4.3
3.2
1.8
0.9
0.4
0.1
0.0
0.0 | 4.4
8.5
5.6
3.5
2.1
1.1
0.5
0.2 | 4.5
17.6
12.7
8.8
6.0
3.8
2.3
1.3
1.3 | 4.6
31.3
23.7
17.7
12.9
9.1
6.3
4.1
 | 13355
13335
4.7
50.3
39.6
30.7
23.5
17.7
13.0
9.4 |
| 4.7
Estádio 2
X ₂ ≡ Db
10
10.1
10.2
10.3
10.4
10.5
10.6
10.7
10.8 | X;: | 3.8
10563.2
10516.7
10478.5
10448.3
10425.6
10410.0
10401.3
10499.1
10409 | 2440.8
3.9
10538.7
10490.1
10449.4
10416.3
10390.5
10357.2
10355.2
10355.2 | U
4.0
10526.2
10476.4
10434.3
10399.5
10371.6
10356.♣
10335.4
10326.5
 | 2(X ₂ X ₁)=Q
4.1
10521.5
10471.5
10429.0
10393.4
10364.4
10325.2
10314.4
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
10309.1
1 | (X ₂)+R ₂ (X ₃)
4.2
10523.4
10473.0
10394.5
10365.2
10324.6
10324.6
10324.7
10304 | +\$2(X ₂ X ₁)+
4.3
10532.1
10480.8
10437.3
10401.1
10371.6
10348.2
10330.7
10318.4
10312.3
 | U ₁ [*] (X ₁)
4.4
10548.0
10495.2
10450.5
10413.4
10383.1
10359.3
10341.4
10329.0 | 4.5
10571.5
10516.6
10470.2
10431.6
10400.3
10375.6
10357.0
10344.1
10354.1 | 4.6
10603.0
10545.4
10496.8
10456.3
10423.3
10397.2
10377.5
10363.7 | 4.7
10642.6
10581.9
10530.5
10487.6
10452.5
10424.6
10403.4
10388.3
1032.4
 | 2440.8
U2*(X2)
10521.5
10471.5
10429.0
10393.4
10364.4
10344.8
10324.6
10312.7
10306.1 | 2159.1
Q2(X2)
5740.1
5809.6
5879.5
5949.7
6020.1
6090.9
6162.0
6233.4
6395.5 | 281.6
R ₂ [X ₂]
2411.4
2291.9
2179.5
2073.7
1880.0
1791.3
1707.7
1428.7 | 52(X2X1)
3.8
6.5
9.9
14.4
19.8
26.3
34.0
42.9
52.9
 | 8.1
3.9
1.2
2.5
4.4
7.0
10.5
14.7
19.9
26.1
33.2 | 4.0
0.0
0.2
0.7
1.6
3.0
4.9
7.5
10.9 | 8.3
Diametro
4.1
0.0
0.0
0.0
0.1
0.4
1.0
1.9
3.4 | 4.2
0.7
0.3
0.1
0.0
0.0
0.0
0.0
0.2
0.6
1.2 | 4.3
3.2
1.8
0.9
0.4
0.1
0.0
0.0
0.0
0.0
0.0
0.0 | 4.4
8.5
5.6
3.5
2.1
1.1
0.5
0.2
0.0 | 4.5
17.6
12.7
8.8
6.0
3.8
2.3
1.3
0.7
0.0 | 4.6
31.3
23.7
17.7
12.9
9.1
6.3
4.1
2.6
0.0
 | 4.7
50.3
39.6
30.7
23.5
17.7
13.0
9.4
6.5
0.3 |
| 4.7
<u>X₂ ≡ Db</u>
10
10.1
10.2
10.4
10.4
10.5
10.6
10.7
10.9 | x,: | 3.8
10563.2
10516.7
10478.5
10448.3
10425.6
10410.0
10401.3
10403.1
10403.1 | 2440.8
3.9
10538.7
10490.1
10449.4
10416.3
10390.5
10359.2
10352.9
10352.9
10358.7 | U
4.0
10526.2
10476.4
10434.3
10399.5
10371.6
10335.4
10325.5
10323.3
10325.3
 | 2(X ₂ X ₁)=Q,
4.1
10521.5
10471.5
10429.0
10393.4
10394.4
10394.4
10325.2
10314.4
10309.0
10309.0 | (X ₂)+R ₂ (X ₃)
4.2
10523.4
10473.0
10394.5
10394.5
10365.2
10342.0
10324.6
10312.7
10306.1 | +\$2(X ₂ ,X ₁
)+
4.3
10532.1
10480.8
10437.3
10401.1
10371.6
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8
10331.8 | U ₁ [*] (X ₁)
4.4
10548.0
10495.2
10450.5
10413.4
10359.3
10341.4
10329.0
10321.8
10331.8 | 4.5
10571.5
10516.6
10470.2
10431.6
10400.3
10375.6
10357.0
10344.1
10335.4 | 4.6
10603.0
10545.4
10456.3
10456.3
10423.3
10397.2
10377.5
10363.7
10353.8
 | 4.7
10642.6
10581.9
10530.5
10487.6
10452.5
10424.6
10403.4
10388.3
10374.7 | 2440.8
U2*(X2)
10521.5
10471.5
10429.0
10393.4
10344.4
10324.6
10324.6
10312.7
10306.1
10304.6 | 2159.1
Q2(X2)
5740.1
5809.6
5879.5
5949.7
6020.1
6090.9
6162.0
6233.4
6305.0
6377.0 | 281.6
R ₂ (X ₂)
2411.4
2291.9
2179.5
2073.7
1973.9
1970.7
1628.7
1628.4
 | 52(X2X1)
3.8
6.5
9.9
14.4
19.8
26.3
34.0
42.9
52.9
64.2
76.7 | 8.1
3.9
1.2
2.5
4.4
7.0
10.5
14.7
19.9
26.1
33.2
41.5 | 4.0
0.0
0.2
0.7
1.6
3.0
4.9
7.5
10.9
15.0
19.9 | 4.1
0.0
0.0
0.0
0.1
0.4
1.0
1.9
3.4
5.4
8.0 | 4.2
0.7
0.3
0.1
0.0
0.0
0.0
0.2
0.6
1.2
2.3 | 4.3
3.2
1.8
0.9
0.4
0.1
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0 | 4.4
8.5
5.6
3.5
2.1
1.1
0.5
0.2
0.0
0.1
0.0
 | 4.5
17.6
12.7
8.8
6.0
3.8
2.3
1.3
0.7
0.0
0.1 | 4.6
31.3
23.7
17.7
12.9
9.1
6.3
4.1
2.6
0.0
0.8 | 4.7
50.3
39.6
30.7
23.5
17.7
13.0
9.4
6.5
0.3
2.8 |
| 4.7
Estádio 2
X₂ ≡ Db
10
10.1
10.2
10.3
10.4
10.5
10.6
10.7
10.8
10.9 | x;: | 3.8
10563.2
10516.7
10478.5
10448.3
10425.6
10410.0
10401.3
19399.1
10403.1
10403.1 | 2440.8
3.9
10538.7
10490.1
10449.4
10416.3
10390.5
10359.2
10355.2
10355.2
10358.5 | U
4.0
10526.2
10476.4
10434.3
10399.5
10371.6
10350.↓
10326.5
10323.3
10325.6
 | 2(X ₂ X ₁)=Q,
4.1
10521.5
10471.5
10429.0
10393.4
10394.4
10325.2
10314.4
10309.0 | (X ₂)+R ₂ (X ₂)
4.2
10523.4
10473.0
10430.2
10394.5
10342.0
10324.6
10312.7
10306.1
10304.6 | +\$2(X ₂ ,X ₁)+
4.3
10532.1
10480.8
10437.3
10401.1
10371.6
10318.4
10312.3
10308.8
 | U ₁ [*] (X ₁)
4.4
10548.0
10495.2
10413.4
10359.3
10341.4
10329.0
10321.8
10319.1 | 4.5
10571.5
10516.6
10470.2
10431.6
10400.3
10375.6
10357.0
10344.1
10336.1 | 4.6
10603.0
10545.4
10456.3
10456.3
10423.3
10397.2
10377.5
10363.7
10353.8
10352.0 | 4.7
10642.6
10581.9
10530.5
10487.6
10452.5
10424.6
10403.4
10388.3
10374.8
10374.7
 | 2440.8
U2*(X2)
10521.5
10471.5
10471.5
10429.0
1039.4
10364.4
10341.8
10324.6
10312.7
10306.1 | 2159.1
G2(X2)
5740.1
5809.6
5879.5
5949.7
6020.1
6090.9
6162.0
6233.4
6305.0
6377.0 | 281.6
R ₃ (X ₂)
2411.4
2291.9
2179.5
2073.7
1973.9
1880.0
1791.3
1707.7
1628.7
1554.1 | 52(X2,X)
3.8
6.5
9.9
14.4
19.8
26.3
34.0
42.9
52.9
64.2
76.7
 | 8.1
3.9
1.2
2.5
4.4
7.0
10.5
14.7
19.9
26.1
33.2
41.5 | 4.0
0.0
0.2
0.7
1.6
3.0
4.9
7.5
10.9
15.0
19.9 | 4.1
0.0
0.0
0.1
0.4
1.0
1.9
3.4
5.4
8.0 | 4.2
0.7
0.3
0.1
0.0
0.0
0.0
0.0
0.2
0.6
1.2
2.3 | 4.3
3.2
1.8
0.9
0.4
0.1
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0 | 4.4
8.5
5.6
3.5
2.1
1.1
0.5
0.2
0.0
0.1
0.0 | 4.5
17.6
12.7
8.8
6.0
3.8
2.3
1.3
0.7
0.0
0.1 | 4.6
31.3
23.7
17.7
12.9
9.1
6.3
4.1
2.6
0.0
0.8
 | 4.7
50.3
39.6
30.7
23.5
17.7
13.0
9.4
6.5
0.3
2.8 |
| 4.7
Estádio 2
X₂≡ Db
10
10.1
10.2
10.3
10.4
10.5
10.6
10.7
10.8
10.9 | x;: | 3.8
10563.2
10516.7
10478.5
10448.3
10425.6
10410.0
10401.3
10403.1
10403.1 | 2440.8
3.9
10538.7
10490.1
10449.4
10416.3
10390.5
10359.2
10359.2
10352.9
10358.5 | U
4.0
10526.2
10476.4
10434.3
10399.5
10371.6
10335.4
10325.5
10322.6
 | 4(X ₂ X ₁)=Q
4.1
10521.5
10471.5
10429.0
10394.4
10344.8
10325.2
10314.4
10309.1
10309.0 | (X ₂)+R ₂ (X ₂)
4.2
10523.4
10473.0
10430.2
10394.5
10364.5
10342.0
10324.6
10312.7
10306.1
10304.6 | +52(X ₂ X ₁)+
4.3
10532.1
10480.8
10437.3
10401.1
10371.6
10348.2
10330.7
10318.4
10312.3
10308.8
 | U ₁ *(X ₁)
4.4
10548.0
10495.2
10415.5
10413.4
10359.3
10341.4
10329.0
10321.8
10319.1 | 4.5
10571.5
10516.6
10470.2
10431.6
10400.3
10375.6
10337.0
10344.1
10333.6 | 4.6
10603.0
10545.4
10496.8
10456.3
10423.3
10397.2
10377.5
10363.7
10353.8
10352.0 | 4.7
10642.6
10581.9
10452.5
10452.5
10424.6
10403.4
10388.3
10374.8
10374.7
 | 2440.8
U2*(X2)
10521.5
10471.5
10471.5
10479.0
10392.0
10394.4
10341.8
10344.4
10341.8
1036.1
10304.6 | 2159.1
Q2(X2)
5740.1
5809.6
5879.5
5949.7
6020.1
6090.9
6162.0
6233.4
6305.0
6377.0 | 281.6
R ₃ (X ₂)
2411.4
2291.9
2179.5
2073.7
1973.9
1880.0
1791.3
1707.7
1628.7
1554.1 | 52(X2X)
3.8
6.5
9.9
14.4
19.8
26.3
34.0
42.9
52.9
64.2
76.7
 | 81
3.9
1.2
2.5
4.4
7.0
10.5
14.7
19.9
26.1
33.2
41.5 | 4.0
0.0
0.2
0.7
1.6
3.0
4.9
7.5
10.9
15.0
19.9 | 4.1
0.0
0.0
0.0
0.1
0.4
1.0
1.9
3.4
5.4
8.0 | 4.2
0.7
0.3
0.1
0.0
0.0
0.0
0.0
0.2
0.6
1.2
2.3 | 4.3
3.2
1.8
0.9
0.4
0.1
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0 | 4.4
8.5
5.6
3.5
2.1
1.1
0.5
0.2
0.0
0.1
0.0 | 4.5
17.6
12.7
8.8
6.0
3.8
2.3
1.3
0.7
0.0
0.1 | 4.6
31.3
23.7
17.7
12.9
9.1
6.3
4.1
2.6
0.0
0.8
 | 4.7
50.3
39.6
30.7
23.5
17.7
13.0
9.4
6.5
0.3
2.8 |
| 4.7
Estádio 2
X₂ ≡ Db
10
10.1
10.2
10.3
10.4
10.5
10.6
10.7
10.8
10.9
Estádio 2 | x,: | 3.8
10563.2
10516.7
10478.5
10448.3
10425.6
10410.0
10401.3
10499.1
10403.1
10403.1 | 3.9
10538.7
10490.1
10449.4
10416.3
10390.5
10359.2
10359.2
10358.5 | U
4.0
10526.2
10476.4
10434.3
10399.5
10371.6
10335.4
10326.5
10322.6
 | a(X ₂ X ₁)=Q,
4.1
10521.5
10471.5
10429.0
10394.4
10344.8
10325.2
10314.4
10309.1
10309.0 | (X ₂)+R ₂ (X ₂)
4.2
10523.4
10473.0
10430.2
10394.5
10345.0
10342.6
10312.7
10306.1
10304.6 | +52(X ₂ X ₁)+
4.3
10532.1
10480.8
10437.3
10401.1
10371.6
10348.2
10330.7
10318.4
10312.3
10308.8
 | U ₁ *(X ₁)
4.4
10548.0
10495.2
10415.5
10413.4
10359.3
10341.4
10329.0
10321.8
10319.1 | 4.5
10571.5
10516.6
10470.2
10431.6
10403.3
10375.6
10357.0
10344.1
10333.6 | 4.6
10603.0
10545.4
10456.3
10425.3
10397.2
10377.5
10363.7
10353.8
10352.0 | 4.7
10642.6
10581.9
10452.5
10452.5
10424.6
10403.4
10388.3
10374.8
10374.7
 | 2440.8
U2*(X2)
10521.5
10471.5
10429.0
10393.4
10344.8
10324.6
10324.6
10304.6 | 2159.1
Q4(X4)
5740.1
5809.6
5879.5
5949.7
6020.1
6020.0
6162.0
6162.0
6162.0
6162.0
6162.0
6163.4
6307.0 | 281.6
R ₃ [X ₃]
2411.4
2291.9
2179.5
2073.7
1973.9
1880.0
1791.3
1800.0
1791.3
1628.7
1554.1 | 80
S ₂ (X ₂ X ₁)
3.8
6.5
9.9
14.4
19.8
26.3
34.0
42.9
52.9
64.2
76.7
 | 81
3.9
1.2
2.5
4.4
7.0
10.5
14.7
19.9
26.1
33.2
41.5 | 4.0
0.0
0.2
0.7
1.6
3.0
4.9
7.5
10.9
15.0
19.9 | 4.1
0.0
0.0
0.0
0.1
0.4
1.0
1.9
3.4
5.4
8.0 | 4.2
0.7
0.3
0.1
0.0
0.0
0.0
0.2
0.6
1.2
2.3 | 4.3
3.2
1.8
0.9
0.4
0.1
0.0
0.0
1.2
0.3 | 4.4
8.5
5.6
3.5
2.1
1.1
0.5
0.2
0.0
0.1
0.0 | 4.5
17.6
12.7
8.8
6.0
3.8
2.3
1.3
0.7
0.0
0.1 | 4.6
31.3
23.7
17.7
12.9
9.1
6.3
4.1
2.6
0.0
0.8
 | 4.7
50.3
39.6
30.7
23.5
17.7
13.0
9.4
6.5
0.3
2.8 |
| 4.7
Estádio 2
X₂ ≡ Db
10
10.1
10.2
10.3
10.4
10.5
10.6
10.7
10.8
10.9
Estádio 2 | x,: | 3.8
10563.2
10516.7
10478.5
10448.3
10425.6
10401.3
10429.1
10403.5
10403.5 | 3.9
10538.7
10490.1
10449.4
10416.3
10370.5
10371.5
10351.5
10352.9
10358.5 | U
4.0
10526.2
10476.4
10436.3
10399.5
10371.6
10335.4
10325.6
10325.6
 | 2(X ₂ X ₁)=Q
4.1
10521.5
10429.0
10393.4
10325.2
10314.4
10325.2
10314.4
10329.0
(X_X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X)=Q
(X_2X | (X ₂)+R ₂ (X ₂)
4.2
10523.4
10473.0
10394.5
10345.2
10345.2
10345.4
10324.6
10312.7
10306.1
10304.6 | +\$2(X ₂)X ₁)+
4.3
10532.1
10480.8
10407.3
10401.1
10371.6
10318.4
10318.4
10318.3
10308.8
 | U, (X,)
4.4
10548.0
10495.2
10450.5
10413.4
10359.3
10341.4
10329.0
10321.8
10319.1 | 4.5
10571.5
10516.6
10470.2
10431.6
10470.2
10357.0
10357.0
10354.1
10333.6 | 4.6
10603.0
10545.4
10496.8
10456.3
10497.2
10377.5
10363.7
10353.8
10352.0 | 4.7
10642.6
10581.9
10530.5
10487.6
10452.5
10424.6
10403.4
10403.4
10403.4
10403.4
10403.4
 | 2440.8
U2*(X2)
10521.5
10471.5
10373.4
10354.4
10334.6
10324.6
10312.7
10304.6 | 2159.1
Q2(X3)
5740.1
5899.5
5899.7
6090.9
6162.0
6233.4
6305.0
6377.0 | 281.6
R ₃ (X ₉)
2411.4
2291.9
2179.5
2073.7
1973.9
1973.9
1973.9
1973.9
1975.7
1628.7
1554.1 | 80
S ₂ (X ₂ X ₁)
<u>3.8</u>
6.5
9.9
14.4
19.8
26.3
34.0
42.9
52.9
64.2
76.7
 | 81
3.9
1.2
2.5
4.4
7.0
10.5
14.7
19.9
26.1
33.2
41.5 | 4.0
62
4.0
0.0
0.2
0.7
1.6
3.0
4.9
7.5
10.9
15.0
19.9 | 4.1
0.0
0.0
0.1
0.4
1.0
1.9
3.4
5.4
8.0 | 4.2
0.7
0.3
0.1
0.0
0.0
0.0
0.2
0.6
1.2
2.3 | 4.3
3.2
1.8
0.9
0.4
0.1
0.0
0.0
0.0
1.2
0.3 | 4.4
8.5
5.6
3.5
2.1
1.1
0.5
0.2
0.0
0.1
0.0 | 4.5
17.6
12.7
8.8
6.0
3.8
2.3
1.3
0.7
0.0
0.1 | 4.6
31.3
23.7
17.7
12.9
9.1
6.3
4.1
2.6
0.0
0.8
 | 4.7
50.3
39.6
30.7
23.5
17.7
13.0
9.4
6.5
0.3
2.8 |
| 4.7
Estádio 2
X ₂ ≡ Db
10
10.1
10.2
10.3
10.4
10.5
10.6
10.7
10.8
10.9
Estádio 3
X = DC | X;: | 3.8
10563.2
10516.7
10478.5
10448.3
10425.6
10410.0
10401.3
10401.3
10401.3
10401.3 | 3.9
10538.7
10490.1
10449.4
10416.3
10370.5
10371.5
10352.9
10358.5 | U
4.0
10526.2
10476.4
10339.5
10371.6
10335.4
10325.6
10323.3
10325.6
U
U
 | 2(X ₂ X ₁)=Q
4.1
10521.5
10429.0
10393.4
10324.4
10325.2
10314.4
10309.0
2(X ₃ X ₂)=Q
1039.0 | (X ₃)+R ₃ (X ₃)
10523.4
10473.0
10473.0
10345.2
10342.0
10324.6
10312.7
10304.6
(X ₃)+R ₃ (X ₃) | +\$2{X ₂ X ₃ }
4.3
10532.1
10480.8
10437.3
10401.1
10371.6
10371.6
10312.3
10308.8
+\$3{X ₃ X ₃ }
105
 | U ₁ [*] (X ₁)
4.4
10548.0
10495.2
10450.5
10413.4
10389.3
10341.4
10329.0
10321.8
10319.1
U ₂ [*] (X ₂)
10.4 | 4.5
10571.5
10516.6
10470.2
10431.6
10400.3
10375.6
10344.1
10336.1
10333.6 | 4.6
10603.0
10545.4
10496.8
10456.3
10423.3
10397.2
10363.7
10363.7
10353.8
10352.0 | 4.7
10642.6
10581.9
10430.5
10452.5
10424.6
10403.4
10388.3
10374.8
10374.7
 | 2440.8
U2*(X2)
10521.5
10429.0
10393.4
10341.8
10324.6
10312.7
10306.1
10304.6 | 2159.1
Qa(Xa)
5740.1
5809.6
5879.6
5879.7
6020.1
6020.9
6142.0
6142.0
6142.0
6142.0
6142.0
6145.0
6377.0
Qa(Xa) | 281.6
R ₂ (X ₂)
2411.4
2291.9
2179.5
2073.7
1880.0
1791.3
1707.7
1628.7
1554.1
R ₃ (X ₃) | 52(X2,X1)
3.8
6.5
9.9
14.4
19.8
26.3
34.0
42.9
52.9
64.2
76.7
 | 3.9
1.2
2.5
4.4
7.0
10.5
14.7
19.9
26.1
33.2
41.5 | 4.0
0.0
0.2
0.7
1.6
3.0
4.9
7.5
10.9
15.0
19.9 | 4.1
0.0
0.0
0.1
0.4
1.0
3.4
5.4
8.0 | 4.2
0.7
0.3
0.1
0.0
0.0
0.0
0.2
0.6
1.2
2.3 | 4.3
3.2
1.8
0.9
0.4
0.1
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0 | 4.4
8.5
5.6
3.5
2.1
1.1
0.5
0.2
0.0
0.1
0.0 | 4.5
17.6
12.7
8.8
6.0
3.8
2.3
1.3
0.7
0.0
0.1 | 4.6
31.3
23.7
17.7
12.9
9.1
6.3
4.1
2.6
0.0
0.8
 | 13355
13355
13355
13355
1330
130
130
9.4
6.5
0.3
2.8 |
| 4.7
<u>X₂ ≡ Db</u>
10
10.1
10.2
10.3
10.4
10.5
10.6
10.7
10.8
10.9
Estódio 3
X ₃ ≡ Da | X ₁ : | 3.8
1056322
10516.7
10478.5
10448.3
10425.6
104013
104013
104013
10413.0 | 2440.8
3.9
10538.7
10490.1
10449.4
10416.3
10359.2
10359.2
10355.2
10358.5 | U
4.0
10526.2
10476.4
10434.3
10370.6
10335.4
10326.5
10325.6
0
0025.6
0
0025.6
0
0025.6
0
0025.6
0
0025.6
0
0000000000000000000000000000000000
 | a(X ₂ X ₁)=Q
4.1
105215
10429.0
10394.4
10344.8
10325.2
10314.4
10309.0
a(X ₃ X ₂)=Q
10.3
10309.0 | (X ₂)+R ₂ (X ₂)
4.2
10523.4
10473.0
10430.2
10340.2
10342.0
10342.0
10342.0
10342.0
10342.0
10342.0
10342.0
1034.6
(X ₃)+R ₃ (X ₃)
(X ₃)+R ₃ (X ₃) | +\$2{X ₂ X ₁ }+
4.3
10532.1
10480.8
10437.3
10401.1
10371.6
1038.8
10312.3
10308.8
+\$3{X ₃ X ₂ }+
10.5
 | U ₁ [*] (X ₁)
4.4
10548.0
10495.2
10450.5
10413.4
10359.3
10341.4
10329.0
10319.1
U ₂ [*] (X ₂)
10.6 | 4.5
10571.5
10516.6
10470.2
10403.3
10307.6
10357.0
10344.1
10333.6 | 4.6
10603.0
10545.4
10496.8
10423.3
10397.2
10377.5
10363.7
10353.8
10352.0 | 4.7
10642.6
10581.9
10530.5
10487.6
10452.5
10424.6
10403.4
10374.8
10374.7
 | 2440.8
U2*(X2)
10521.5
10471.5
10429.0
10393.4
10344.4
10344.6
10312.7
10304.6
10304.6 | Q ₂ (X ₂)
5740.1
5879.5
5879.5
5879.5
5879.7
6020.1
6020.9
61620.4
6305.0
63377.0
Q3(X3) | 281.6
R ₂ (X ₂)
2411.4
2291.9
2073.7
1973.9
1880.0
1791.3
1880.0
1791.3
1880.0
1791.3
1880.0
1791.3
1880.0
1791.3
1880.0
1791.3
1880.0
1791.5
1880.0
1791.5
1880.0
1791.5
1880.0
1791.5
1880.0
1791.5
1880.0
1791.5
1880.0
1791.5
1880.0
1791.5
1880.0
1791.5
1880.0
1791.5
1880.0
1791.5
1880.0
1791.5
1880.0
1791.5
1973.9
1880.0
1791.5
1973.9
1880.0
1791.5
1973.9
1880.0
1791.5
1973.9
1880.0
1791.5
1973.9
1880.0
1791.5
1973.9
1880.0
1791.5
1973.9
1880.0
1791.5
1973.9
1880.0
1791.5
1973.9
1973.9
1880.0
1791.5
1973.9
1880.0
1791.5
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1973.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
1975.9
197 | 52(X2,X1)
3.8
6.5
9.9
14.4
19.8
26.3
34.0
42.9
52.9
64.2
76.7
53(X2,X2)
10.0
 | 81
81
1.2
2.5
1.2
2.5
14.7
10.5
14.7
19.9
26.1
33.2
41.5
10.1 | 4.0
62
4.0
0.0
0.2
0.7
1.6
3.0
9.7.5
10.9
15.0
19.9
10.2 | 4.1
0.0
0.0
0.0
0.4
1.0
1.9
3.4
8.0 | 4.2
0.7
0.3
0.1
0.0
0.0
0.0
0.0
0.0
0.2
0.6
1.2
2.3 | 4.3
3.2
1.8
0.9
0.4
0.1
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
1.2
0.3 | 4.4
8.5
5.6
3.5
2.1
1.1
0.5
0.0
0.0
0.1
0.0 | 4.5
17.6
12.7
8.8
6.0
3.8
2.3
1.3
0.7
0.0
0.1 | 4.6
31.3
23.7
17.7
12.9
9.1
6.3
4.1
2.6
0.0
0.8
 | 13355
13335
13335
13335
1335
1335
14.7
13.0
9.4
0.3
2.8
10.9
10.9 |
| 4.7
$X_3 \equiv Db$
10
10.1
10.2
10.3
10.4
10.5
10.6
10.7
10.8
10.7
10.8
10.9
Estádio 3
$X_3 \equiv Dc$
8 | X ₁ : | 3.8
105632
105167
10478.5
10448.5
104403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
10403
1040
1040 | 2440.8
3.9
10538.7
10490.1
10496.1
10496.1
10390.5
10390.5
10392.5
10352.9
10352.9
10352.9
10352.5
10.1 |
U
4.0
10526.2
10476.4
10349.5
10371.6
10323.3
10325.6
U
1022.3
10325.4
U.2
1022.3
1042.1
1042.1
1042.1
1042.1
1042.1
1042.1
1042.1
1042.1
1042.1
1042.1
1042.1
1042.1
1042.1
1042.1
1042.1
1042.1
1042.1
1042.1
1042.1
1042.1
1042.1
1042.1
1043.1
10371.6
1043.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1
1032.1 | 2(X ₂ X ₁)=Q,
4.1
10521.5
10471.5
10471.5
103429.0
10344.4
10344.4
10309.1
10309.0
5(X ₃ X ₂)=Q,
10.3
10492.0
10492.0 | (X ₂)+R ₂ (X ₂)
4.2
10523.4
10473.0
10340.2
10342.0
10342.0
10324.6
10324.6
(X ₃)+R ₂ (X ₃)
10304.6
10501.2
13443 € | +52(X ₂ ,X ₁)+
4.3
10532.1
10480.8
10437.3
10401.1
10371.6
10371.6
10371.6
10371.6
10372.3
10308.8
+53(X ₃ ,X ₃)+
105 .8
135 [8.5]
 | U ₁ [•] (X ₁)
4.4
10548.0
10495.2
10450.5
10413.4
10389.3
10321.8
10321.8
10329.0
10321.8
10319.1
U ₂ [•] (X ₂)
10.6
13543.1
13477.0
6 | 4.5
10571.5
10516.6
10470.2
10431.6
10357.0
10335.1
10333.6
10.3
10.7
10.7 | 4.6
10603.0
10545.4
10496.8
10496.8
10496.8
10397.2
10397.2
10397.2
10352.0
10352.0
10.8
10.8
 | 4.7
10642.6
10581.9
10487.6
10452.5
10424.6
10403.4
10388.3
10374.8
10374.7
10403.4
10374.7 | 2440.8
U2*(X2)
10521.5
10471.5
10429.0
10389.4
10384.4
10384.6
10324.6
10324.6
10324.6
10324.6
10324.6
10324.6
10324.1
10304.6 | 2159.1
Q ₂ (X ₂)
5740.1
5879.5
5879.5
5879.7
6020.1
6070.9
6122.0
6233.4
6305.0
6337.0
Q3(X3)
Q3(X3)
2147.4
2159.0 | 281.6
R ₃ (X ₃)
2411.4
2291.9
2179.5
2073.7
1791.3
1707.7
1628.7
1554.1
R ₃ (X ₃)
R ₃ (X ₃)
 | 5₂(X₂X)
3.8
6.5
9.9
14.4
19.8
26.3
3.4.0
42.9
52.9
64.2
76.7
5.3(X₃X₂)
10.0
252.2
207.7 | 81
3.9
1.2
2.5
4.4
7.0
10.5
14.7
19.9
26.1
10.5
14.7
19.9
26.1
13.2
26.5
41.5
10.5
14.7
12.5
14.7
12.5
14.7
12.5
14.7
12.5
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
14.7
1 | 4.0
0.0
0.2
0.7
1.6
3.0
4.9
7.5
10.9
15.0
19.9
10.2
319.0
245 0 | 4.1
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0 | 42
0.7
0.3
0.1
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0 | 4.3
3.2
1.8
0.9
0.4
0.1
0.0
0.0
0.0
1.2
0.3
10.5
10.5 | 4.4
8.5
5.6
3.5
2.1
1.1
0.5
0.2
0.0
0.1
0.0
0.1
0.0 |
4.5
17.6
12.7
8.8
0.3
8.8
2.3
1.3
0.7
0.0
0.1
10.7
518.7
444.6 | 4.6
31.3
23.7
17.7
12.9
9.1
6.3
4.1
2.6
0.0
0.8
0.8
10.8 | 13355
13355
13355
1335
1335
1335
1335
134
135
137
130
9.4
6.5
0.3
2.8
10.9
6.0
4.7
10.9
6.0
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10. |
| 4.7
$X_2 \equiv Db$
10
10.1
10.2
10.3
10.4
10.5
10.6
10.7
10.8
10.9
Estádio 3
$X_3 \equiv Dc$
8
8.
8.2 | X ₁ : | 3.8
10563.2
1051678.5
10478.5
10425.6
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10501.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2
10000.2 | 3.9
10538.7
10490.1
10446.3
10390.5
10359.2
10359.2
10359.5
10359.5
10359.5
10359.5 | U
4.0
10526.2
10476.4
10434.3
10335.4
10335.4
10335.4
10335.5
0
10335.6
U
U
U
U
0.2
13491.3
13446.2
 | (X ₂ X ₃)=Q
4.1
10521.5
10479.0
10392.4
10392.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10394.4
10 | (X ₂)+R ₂ (X ₂)
4.2
10523.4
10430.2
10394.5
10365.2
10342.0
10324.6
10312.7
10304.6
(X ₃)+R ₄ (X ₃)
10304.6
(X ₃)+R ₄ (X ₃)
10.3
10.3
10.3
10.3
10.3
10.3
10.3
10.3 | +52(X ₂ ,X ₁)+
4.3
10532.1
10437.3
10437.3
10437.3
10371.6
10371.6
10312.3
10308.8
+53(X ₂ ,X ₂)+
10.5
13518.5
13456.6
13456.6
 | u ¹ ₁ (X,)
4.4
10548.0
10495.2
10450.2
10430.4
10383.1
10319.1
10329.0
10321.8
10319.1
10329.0
10321.8
10319.1
10329.0
1036
103643.1
13476.0 | 4.5
10571.5
10516.6
10470.2
10431.6
10400.3
10357.0
10357.0
10357.0
10333.6
10.7
13574.7
135574.7 | 4.6
10603.0
10545.4
10456.3
10456.3
10456.3
10456.3
10352.0
10352.0
10.8
13613.2
13538.4
13538.4
13479.5 |
4.7
10642.6
10581.9
10530.5
10487.6
10487.6
10487.6
10487.6
10487.4
10388.3
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10374.8
10074.8
10074.8
10074.8
10 | 2440.8
U2*(X2)
10521.5
10471.5
10393.4
10344.4
10324.6
10324.6
10304.6
10304.6
10304.6
10304.6
10304.6 | 2159.1
Qa(Xa)
5740.1
5809.6
5879.5
5879.7
6020.1
6020.9
6162.0
6355.0
6377.0
Q3(Xa)
2147.4
2168.0
2168.0 | 281.6
R ₃ (X ₂)
2411.4
2291.9
2179.5
2179.5
2179.7
1973.9
1783.0
1791.3
1707.7
1554.1
R ₃ (X ₃)
R ₃ (X ₃)
S 95.9
S 88.4
 | 50
52[X ₂ X ₄]
3.8
6.5
9.9
14.4
19.8
26.3
34.0
42.9
52.9
64.2
76.7
53[X ₃ X ₃]
10.0
252.2
207.1
168.6 | 8.1
3.9
1.2
2.5
4.4
7.0
10.5
14.7
26.1
33.2
41.5
10.1
284.6
235.5
193.4 | 4.0
0.0
0.2
0.7
1.6
3.0
4.9
15.0
19.9
10.2
319.0
265.9
220.1 | 4.1
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0 | 4.2
0.7
0.3
0.1
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0 | 4.3
3.2
1.8
0.9
0.4
0.1
0.0
0.0
0.0
0.0
0.0
0.0
0.0
1.2
0.3
10.5
433.5
367.9
310.6 | 4.4
8.5
5.6
3.5
2.1
1.1
0.5
0.2
0.0
0.0
0.1
0.0
0.1
0.0
0.1
0.0 | 4.5
17.6
12.7
8.8
0.7
0.0
0.1
10.7
518.7
444.6
779.4
 | 4.6
31.3
23.7
17.7
9.1
6.3
4.1
2.6
0.0
0.8
10.8
563.7
4485.3
5463.7 | 13355
13355
13355
1335
1335
1335
10,7
13,0
9,4
6,5
0,3
2,8
10,9
610,4
527,7
610,4
527,7
610,4
527,7
610,4
527,7
610,4
527,7
610,4
527,7
610,4
527,7
610,4
527,7
610,4
527,5
610,4
527,5
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
610,4
61 |
| 4.7
$X_2 \equiv Db$
10
10.2
10.3
10.4
10.5
10.6
10.7
10.8
10.9
Estádio 3
$X_3 \equiv Dca$
8
8.1
8.2
8.3 | X ₁ : | 3.8
10563.2
10516.7
10478.3
10425.6
10410 3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
10401.3
1 | 2440.8
3.9
10538.7
10490.1
10492.4
10359.2
10359.2
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9
10352.9 |
U
4.0
10526.2
10476.4
10339.5
10371.6
10335.4
10326.5
U
10323.3
10325.6
U
10323.3
10325.6
U
10323.3
10325.6
U
10323.3
10325.6
U
10323.5
U
10325.6
U
10325.6
U
10355.6
U
10355.6
U
10355.6
U
10355.6
U
10355.6
U
10355.6
U
10355.6
U
10355.6
U
10355.6
U
10355.6
U
10355.6
U
10355.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
1032
1035.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
10325.6
U
1035.6
U
1035.6
U
1035.6
U
1035.6
U
1035.6
U
1035.6
U
1035.6
U
1035.6
U
1035.6
U
1035.6
U
1035.6
U
1035.6
U
1035.6
U
1035.6
U | (X ₂ X ₁)=Q ₄
4.1
105
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5 | (X ₃)+R ₂ (X ₃)
4.2
10523.4
10430.2
10394.5
10342.0
10324.6
10324.6
10304.6
(X ₃)+R ₂ (X ₃)
10304.6
10304.7
10304.1
10304.7
10304.7
10304.7
104
10501.2
13400.3
13370.7
13470.3
13470.3
13470.3
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5
13470.5 | +\$2(X ₂ ,X ₁)+
4.3
10532.1
10480.8
10437.3
10401.1
10371.6
10346.2
10336.2
10388.8
+\$3(X ₃ ,X ₂)+
10.5
1345.6.6
1345.6.6
1345.6.6
 | U ₁ [*] (X ₁)
4.4
10548.0
10450.5
10413.4
10351.3
10341.4
10359.3
10341.4
10359.3
10341.4
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
10359.3
1 | 4.5
10571.5
10516.6
10470.2
10431.6
10357.0
10357.0
10344.1
10333.6
10333.6
10357.1
10334.1
10333.6 | 4.6
10603.0
10545.4
10456.3
10456.3
10435.8
10352.0
10352.0
10353.8
10352.0
10.8
13613.2
13533.4
13435.2
 | 4.7
10642.6
10530.5
10487.6
10452.5
10487.6
10452.6
10452.6
10452.6
10452.6
10452.6
10452.6
10374.8
10374.7
10.9 | 2440.8
U2*(X2)
10521.5
10471.5
10429.0
10393.4
10344.8
10344.8
10342.7
10366.1
10304.6
U31(Xa)
13494.1
13494.1
13499.1
13499.1
13499.1 | 2159.1
Q ₄ (X ₄)
5740.1
5897.5
5879.5
5879.7
6070.9
61620.4
6070.9
6123.4
6305.0
6233.4
6305.0
6377.0
2147.4
2168.0
2168.8
2168.8 | 281.6
R ₂ (X ₂)
2411.4
2291.9
2179.5
2073.7
1973.9
1880.0
1791.3
1707.7
1554.1
R ₃ (X ₃)
F
F
F
F
F
F
F
F
 | 52[X2X1]
3.8
6.5
9.9
14.4
19.8
26.3
34.0
42.9
64.2
76.7
53[X3X2]
10.0
252.2
207.1
168.6
136.0 | 8.1
3.9
1.2
2.5
4.4
7.0
10.5
14.7
19.9
26.1
33.2
41.5
10.1
284.6
235.5
193.4
157.6 | 4.0
0.0
0.2
0.7
1.6
3.0
4.9
7.5
15.0
19.9
15.0
19.9
10.2
2319.0
265.9
220.1
180.8 | 4.1
0.0
0.0
0.1
0.4
1.0
1.9
3.4
8.0
10.3
355.3
298.1
248.5
205.8 | 4.2
0.7
0.3
0.1
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0 | 4.3
3.2
1.8
0.9
0.4
0.1
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0 | 4.4
8.5
5.6
3.5
2.1
1.1
0.5
0.2
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0
0.1
0.0
 | 4.5
17.6
12.7
8.8
2.3
1.3
0.7
0.0
0.1
10.7
518.7
444.6
379.4
4322.3 | 4.6
31.3
23.7
12.9
9.1
4.1
2.6
0.8
0.8
10.8
563.7
485.3
416.2
355.3 | 13355
13335
4.7
5.0.3
3.9,6
3.0,7
2.3,5
0.3
2.8
10,9
6.10,4
527,7
4.54,5
3.0,3
2.8 |
| 4.7
x ₂ ≡ Db
10
10.1
10.2
10.4
10.5
10.6
10.7
10.8
10.9
Estádio 3
X ₃ ≡ Da
8
8.1
8.2
8.3
8.4 | X ₁ : | 3.8
10563.2
105167
10478.5
10448.3
10425.6
10401.3
10425.0
10401.3
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10517.0
13475.5
13447.3
13431.3 | 3.9
10538.7
10490.1
10492.1
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2 |
U
4.0
10526.2
10476.4
10337.6
10335.4
10335.4
10325.6
U
U
0.2
13491.3
13441.8
13406.2
13481.8
13406.2
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13483.6
13473.6
13483.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
13473.6
14 | (X ₂ X ₃)=Q ₄
41
1051.5
1049.0
1039.3
1039.3
1039.3
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2
1039.2 | (X,)+R,(X,)
42
10523
10430.2
10340.2
10340.2
10342.0
10324.7
10306.1
1030.4
1031.2
10306.1
1030.4
1031.2
1032.0
1031.2
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0
1032.0 | +\$2(X ₅ X ₁)

4.3
10532.1
10400.8
10437.3
10400.8
10400.8
10400.8
10400.8
10400.8
1037.6
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1038.8
1 | U ¹ ₁ (X ₁)
4.4
10548.0
10495.2
10430.5
10430.5
10430.5
1038.1
10382.1
10329.0
10321.8
10329.0
10321.8
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10329.0
10 | 4.5
10571.5
10516.6
10470.2
10470.2
10375.4
10357.0
10357.0
10354.1
10333.6
10357.7
10357.7
113574.7
113574.2
113474.3
113408.8 | 4.6
10603.0
10545.4
10496.8
10496.8
10475.5
10375.5
10375.5
10375.7
10353.8
10352.0
10.8
10352.0
10.8
10353.8
10352.0
10.8
 | 4.7
10642.6
10581.9
10487.5
10482.5
10424.6
10403.4
10388.3
10374.8
10374.7
10388.3
10374.8
10374.7
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10455.5
10 | 2440.8
U2* (X2)
10521.5
10471.5
10393.4
10394.6
10324.6
10324.6
10306.1
10304.6
10304.6
10304.6
10304.6
10304.6
10304.6
10304.6
10304.6
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7 | 2159.1 | 281.6
R ₃ (X ₂)
2411.4
2291.9
2179.5
2073.7
1973.9
1880.0
1791.3
1707.7
1628.7
1554.1
R ₃ (X ₃)
R ₃ (X ₃)
S 95.9
S 88.4
S 94.0
S 05.8
 | 52[X ₂ ,X ₁]
3,8
6,5
9,9
14,4
19,8
26,3
34,0
42,9
52,9
64,2
76,7
55_5[X_3,X_2]
10,0
252,2
207,1
168,6
136,0
108,6 | 3.9
1.2
2.5
4.4
7.0
10.5
14.7
19.9
26.1
33.2
41.5
10.1
284.6
235.5
193.4
157.6
157.6 | 4.0
0.0
0.7
1.6
3.0
7.5
10.9
15.0
19.9
10.2
319.0
2265.9
220.1
180.8
180.8 | 4.1
0.0
0.0
0.1
0.4
1.9
3.4
8.0
10.3
2553
2558
2058
169.2 | 4.2
0.7
0.3
0.1
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.2
0.6
1.2
2.3
10.4
933.5
332.1
278.7
232.5
1192.6 | 4.3
3.2
1.8
0.9
0.4
0.1
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0 | 4.4
8.5
5.6
3.5
2.1
1.1
0.5
0.2
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.0
 | 4.5
17.6
12.7
8.8
2.3
1.3
0.7
0.0
0.1
10.7
10.7
10.7
10.7
10.7
10 | 4.6
31.3
23.7
12.9
9.1
6.3
4.1
2.6
0.0
0.8
10.8
563.7
485.3
416.2
355.3
501.9 | 13355
13335
4.7
5.0
3.9,6
3.0,7
7.2
1.3,0
9,4
6.5
0.3
2.8
10.9
6.10.4
527,7
454,5
393,0
333,0
0.3
333,0
0.3
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10. |
| 4.7
Estádio 1
10
10.1
10.2
10.4
10.5
10.4
10.5
10.6
10.7
10.8
10.9
Estádio 1
X ₃ ≡Do
8
8
8
1
8
8
8
8
8
4
8.4
8.5 | X ₁ : | 3.8
10563.2
105167
10478.5
10442.3
10425.4
10401.3
10425.4
10401.3
10425.4
10403.1
10401.3
10425.4
10413.0
10401.3
10451.7
10413.0
10517.0
13517.0
13517.0
13517.0
13517.0
13517.2
1347.5
13447.3
13451.5
13447.3
13451.5
13447.5
13447.5
13447.5
13447.5
13447.5
13447.5
13447.5
13447.5
13447.5
13447.5
13447.5
13447.5
13447.5
13447.5
13447.5
13447.5
13447.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1051.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1046.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1045.5
1005.5
1005.5
1005.5
1005.5
1005.5
1005.5
1005.5
1005.5
1005.5
1005.5
1005.5
1005.5
1005.5
1005. | 2440.8
3.9
10538.7
10490.1
10449.4
10449.4
10449.4
10349.5
10359.5
10352.9
10352.9
10352.9
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5 |
U
4.0
1055&L2
10476.4
10343.3
10371.6
10325.5
10325.5
10325.5
U
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
10325.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
1035.5
105 | (X ₂ X ₁)=Q
4.1
10521-5
10471.5
10342.4
10344.4
10344.4
10392.1
10309.0
10309.0
10309.0
10309.0
10309.0
10314.4
10309.1
10309.1
10399.0
10314.4
10399.1
10399.0
10314.4
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
10399.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1
1039.1 | (X ₃)+R ₃ (X ₃)
42
105234
105234
104330
104330
104330
10394,5
10394,5
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10324,6
10334,6
10335,7
10364,1
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,6
10354,7
10364,6
10354,7
10354,7
10354,7
10354,7
10354,7
10354,7
10354,7
10354,7
10354,7
10354,7
10354,7
10354,7
10354,7
10354,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
10355,7
105 | +52(X ₅ X ₅)
10532.1
10460.8
10460.8
10461.1
10371.6
10380.7
10388.4
10312.3
10308.8
+53(X ₅ X ₆
)
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8
1036.8 | U, (X,)
4.4
105480.
10450.5
10413.4
10359.3
10314.1
10329.0
10321.8
10321.8
10321.9
10321.8
10321.0
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10320.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340.1
10340. | 4.5
10571.5
10516.6
10470.2
10431.6
10470.2
10470.2
10470.2
10356.1
10356.1
10333.6
10340.1
10333.6
10340.1
10333.6
10340.1
10340.1
10350.2
113570.2
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408.8
113408 |
4.6
1060300
10545,4
10496,8
10496,8
10496,8
10492,3
10397,2
10353,8
10353,8
10352,0
10,8
13633,4
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
13404,8
1 | 4.7
10642.6
10581.9
10487.6
10452.5
10487.6
10432.4
10432.4
10388.3
10374.8
10388.3
10374.7
10.9
13658.2
13458.2
13458.3
13454.3 | 2440.8
U2*(X2)
10521.5
10471.5
10373.4
10374.6
10312.7
10304.6
10304.6
10304.6
10304.6
10304.6
10304.6
10304.6
10304.7
10304.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
13377.7
1377.7
1377.7
1377.7
1377.7
1477.7
1577.7
1577.7
1577.7
1577.7
1577.7
1577.7
1577.7 | 2159.1
Qa(Xa)
5740.1
5809.6
5879.5
5879.7
6020.1
6090.9
6162.0
6233.4
6305.0
6377.0
Q3(Xa)
2147.4
2158.8
2179.8
2179.8
2179.8
 | 281.6
R ₃ (X ₃)
2411.4
2291.9
2179.5
2179.7
1973.9
1880.0
1791.3
1707.7
1554.1
R ₃ (X ₃)
R ₃ (X ₃)
S 95.9
S 88.4
S 94.0
6 05.8
6 23.6 | $\begin{array}{c} & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ & $ | 8.1
3.9
1.2
2.5
4.4
7.0
10.5
14.7
26.1
33.2
41.5
41.5
10.1
284.6
225.5
193.4
157.6
127.2
101.6 | 4.0
0.0
0.7
1.6
3.0
7.5
10.9
15.0
19.9
10.2
265.9
220.1
180.8
265.9
220.1
180.8
147.4
119.0 | 4.1
0.0
0.0
0.1
1.0
1.0
1.0
3.4
5.4
8.0
10.3
3553.1
248.5
2058.8
169.2
137.9 | 4.2
0.7
0.3
0.1
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0 | 43
32
18
32
18
32
18
0.9
0.9
0.9
0.9
0.9
0.9
0.9
0.9
0.9
0.9 | 4.4
8.5
5.6
3.5
2.1
1.1
0.5
0.2
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0
10.6
405.4
344.2
290.7
244.2
203.9
 | 4.5
17.6
12.7
8.8
6.0
0.3
8.8
2.3
1.3
0.7
0.0
0.1
0.1
10.7
518.7
518.7
4379.4
322.3
272.3
222.9 | 4.6
31.3
23.7
17.7
12.9
9.1
17.7
12.9
6.3
4.1
2.6
0.0
0.8
10.8
563.7
41.62
355.3
301.9
255.3 | 13355
13335
13335
13335
13335
14.7
13.0
9.4
6.5
0.3
2.8
10.9
610.4
610.4
610.4
610.4
610.4
610.4
627.7
454.5
389.9
283.1 |
| 4.7
Estàdio 2
X ₂ ≡ Db
10.1
10.2
10.3
10.4
10.5
10.4
10.7
10.4
10.7
10.4
10.7
10.4
10.7
10.4
10.7
10.4
10.7
10.4
10.7
10.4
10.7
10.4
10.7
10.8
10.4
10.7
10.4
10.7
10.4
10.7
10.7
10.7
10.4
10.7
10.4
10.7
10.4
10.7
10.4
10.7
10.4
10.7
10.4
10.7
10.4
10.7
10.4
10.7
10.7
10.4
10.7
10.7
10.8
10.7
10.7
10.8
10.7
10.8
10.9
10.7
10.9
10.8
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10 | X ₁ : | 3.8
105532
105167
10478.5
10448.3
10425.6
10403.
10403.
10403.
10403.
10403.
10403.
10403.
13473.3
13473.3
13447.3
13447.3 | 2440.8
3.9
10538.7
10490.1
10449.4
10449.4
10449.4
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2
10359.2 | U
4.0
105262
10476.4
10330.4
103371.6
10333.4
10325.6
10323.3
10325.6
U
U
U
0.2
13491.3
13446.2
13496.2
13495.3
13446.2
13393.7
13344.8
 | (X,X)=Q
4.1
10521.5
10421.5
10429.0
10393.4
10394.4
10395.1
10395.0
10314.4
10305.2
10314.4
10305.0
10325.2
10314.4
10325.2
10314.4
10325.2
10314.4
10325.2
10314.4
10325.2
10314.4
10325.2
10314.4
10325.2
10314.4
10325.2
10314.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10345.4
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2
10325.2 | (X)+R,(X)
42
105234
104730
104730
103405
103426
103246
103246
103246
103246
103246
103246
103246
10346
10346
10346
104
135012
13445
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
13346
1336
133 | +\$2(%,%)
4.3
10532.1
10480.8
10401.1
10371.4
1038.4
1038.4
1038.4
1038.4
1038.4
1038.4
1038.4
1038.4
1038.4
1038.4
105
105
105
105
104
105
105
104
105
105
105
105
105
105
105
105
 | U ¹ ₁ (X,)
4.4
105480.
10495.2
10495.2
10495.2
10495.2
10495.2
10495.2
10495.2
10495.2
10391.4
10382.8
10319.1
10341.4
10329.0
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
10341.4
103 | 4.5
10571.5
10516.6
10470.2
10431.6
10375.0
10375.0
10336.1
10333.6
10333.6
10.7
13574.7
13574.7
13574.7
13574.7
135443.3
13409.8
13381.8
13381.8 | 4.6
106030.10545.4
10456.8
10456.8
10456.8
10352.0
10352.0
10352.0
10352.0
10352.0
10352.1
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
134 |
4.7
10642.6
10581.9
10580.9
10452.5
10487.6
10452.5
10448.7
10348.3
10374.8
10374.8
10374.7
10403.4
10374.7
10403.4
10374.7
10403.4
10374.7
10403.4
10374.7
10403.4
10374.7
10403.4
10374.7
10403.4
10374.7
10403.4
10374.7
10403.4
10374.7
10403.4
10374.7
10403.4
10374.7
10403.4
10374.7
10403.4
10374.7
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10403.4
10 | 2440.8
U2*(X2)
10521.5
10471.5
10429.0
10393.4
10344.8
10344.8
10342.7
10306.1
10312.7
10306.1
10312.7
10306.1
10312.7
10306.1
10344.8
10394.1
13438.4
13399.1
13438.5
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
13347.9
1334 | 2159.1
Q ₄ (X ₄)
5740.1
5897.5
5879.5
5879.7
6070.9
61620.4
6070.9
6123.4
6305.0
63377.0
2147.4
2158.0
2168.8
2168.8
2168.8
2169.8
2190.9
2203.6 | 281.6
R ₂ (X ₂)
2411.4
2291.9
2179.5
2073.7
1973.9
1880.0
1791.3
1800.0
1791.3
1800.7
1707.7
1628.7
1554.1
R ₃ (X ₃)
S95.9
588.4
594.0
605.8
603.6
647.1
 | 80 \$s[X_s,k] 3.8 26.3 3.8 26.3 3.8 26.3 3.8 26.3 3.8 26.3 3.8 26.3 3.8 26.3 3.8 26.3 3.8 26.3 3.8 26.3 3.8 26.3 3.8 26.4.2 76.7 2522 207.1 10.6 10.8.6 10.8.6 10.8.6 10.8.6 10.8.6 10.8.6 10.8.6 10.8.6 10.8.6 10.8.6 10.8.6 10.8.6 10.8.7 6.67 | 3.9
1.2
2.5
4.4
7.0
10.5
14.7
19.9
26.1
10.5
41.5
41.5
10.1
284.6
235.5
23.2
241.5
103.4
157.6
127.2
101.6
127.2
103.4 | 4.0
0.0
0.2
0.7
1.6
3.0
10.9
15.0
19.9
10.2
319.0
265.9
20.1
180.8
147.4
119.0
95.1
119.9 | 4.1
0.0
0.0
0.1
1.9
3.4
8.0
10.3
255.3
298.1
169.2
248.5
205.8
169.2
248.5
205.8 | 4.2
0.7
0.3
0.1
0.0
0.0
0.0
0.0
0.2
2.3
10.4
333.5
332.1
278.7
222.5
192.6
195.4
4
1292.2 | 4.3
3.2
4.3
3.2
1.8
0.9
0.4
0.1
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0 | 4.4
8.5
5.6
3.5
2.1
1.1
0.5
0.2
0.0
0.1
0.0
0.0
10.6
475.2
405.4
405.4
405.4
405.4
290.7
244.2
290.7
244.2
290.7
169.1
169.1 |
4.5
17.6
12.7
8.8
6.0
0.7
0.0
0.1
0.1
0.1
0.7
518.7
444.6
379.4
444.6
379.4
322.3
272.3
272.3
272.3
272.3
272.3
272.3 | 4.6
31.3
23.7
12.9
9.1
17.7
12.9
9.1
16.3
4.1
2.6
0.0
0.8
10.8
563.7
415.2
301.9
255.3
301.9
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
214.6
255.3
255.3
255.3
255.3
255.3
255.3
255.3
255.3
255.3
255.3
255.3
255.3
255.3
255.3
255.3
255.3
255.3
255.3
255.3
255.3
255.3
255.3
255.3
255.3
255.3
255.3
255.3
255.3
25 | 13355
13335
13335
13335
13335
13,0
13,0
10,7
13,0
9,4
6,5
0,3
2,8
10,7
6,10,4
5,27,7
4,54,5
3,89,9
3,33,0
6,22,31
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,229,4
1,22 |
| 4.7
Estédio 1
$X_{q} \equiv Db$
10
10.2
10.3
10.4
10.5
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.7
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8
10.8 | X ₁ : | 3.8
105532
105167
10478.5
1048.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
104043.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10403.5
10000.5
10000.5
10000.5
10000.5
10000.5
10000.5
10000.5
10000.5
1000 | 3,9
10538,7
10549,1
10449,1
10449,1
10449,4
10349,5
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9
10352,9 |
U
4.0
10556.2
10476.4
10434.3
10371.6
10335.4
10325.5
10325.6
10325.6
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4
10325.4 | (X,X,)=Q,
4.1
10521.5
10429.0
10342.4
10342.4
10342.4
10344.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10354.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
10355.8
1035. | (X3)+R ₂ (X3)
42
10523.4
10473.0
10473.0
10473.0
1034.5
1034.5
1034.5
10324.6
10324.6
10324.6
10324.6
10324.6
10324.6
10324.6
10324.7
10304.6
10304.6
10304.6
10304.7
10304.6
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304 | +\$2(X ₂ ,X ₁
)
43
10532.1
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10400.8
10300.7
10318.4
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
10300.8
1 | U ¹ (X,)
4.4
10548.0
10455.2
10455.2
10455.2
10455.2
10455.2
10359.3
1031.4
10329.8
10319.1
10321.8
10321.8
10321.8
10321.8
10341.4
10329.2
10545.2
13545.1
13545.2
13354.4
13355.2
13354.4
13355.2
13354.4
13355.2
13354.4
13355.2
13354.4
13355.2
13354.4
13355.2
13354.4
13355.2
13354.4
13355.2
13354.4
13355.2
13354.4
13355.2
13354.4
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
13355.2
1355.2
1355.2
1355.2
1355.2
1355.2
1355.2
1355.2
1355.2
1355.2
1355.2
1355.2
1355.2
1355.2
1355.2
1355.2
1355.2
1355.2
1355.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2
1555.2 | 4.5
10571.5
10516.6
10470.2
10431.6
10357.0
10357.0
1034.1
10334.1
10333.6
1034.1
10334.1
10334.1
10334.1
10334.1
10344.1
10334.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10334.1
10334.1
10344.1
10334.1
10334.1
10344.1
10334.1
10334.1
10334.1
10344.1
10334.1
10344.1
10334.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1
10344.1 |
4.6
10603.0
10545.4
10456.3
10345.4
10423.3
10352.0
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7
10363.7 | 4.7
106422.6
10581.9
10580.5
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487.6
10487. | 2440.8
U2* (X2)
10521.5
10471.5
10371.6
10393.4
10393.4
10394.6
10324.6
10324.6
10324.6
10324.6
10304.1
10304.6
10304.6
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
10305.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
1005.7
100 | 2159.1
Q ₂ (X ₄)
5740.1
5899.5
5894.7
6090.9
6120.2
6233.4
6305.0
6377.0
Q3(X3)
2147.4
2158.0
2190.8
2199.8
2199.8
2199.8
2199.9
2202.2
2213.6
225.2
2332.0
 | 281.6
R ₃ (X ₂)
2411.4
2291.9
2179.5
2073.7
1973.9
1880.0
1791.3
1707.7
1628.7
1554.1
R ₃ (X ₃)
R ₃ (X ₃)
R ₃ (X ₃)
R ₃ (X ₃)
R ₃ (X ₃) | 80
51(X_4X)
36
52(Y_4X)
36
51(X_4X)
30
51(X_4X)
10.0
2522
52.9
64.2
76.7
76.7
76.7
10.0
2522
207.1
168.6
136.0
85.7
108.6
85.7
108.6
85.7
108.6
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
136.6
5
15
15
15
15
15
15
15
15
15
15
15
15
1 | 3.9
1.2
2.5
4.4
7.0
10.5
14.7
19.9
26.1
33.2
41.5
41.5
41.5
41.5
41.5
41.5
41.5
41.5 | 4.0
0.0
0.2
0.7
1.6
3.0
4.9
7.5
15.0
19.9
15.0
19.9
10.2
2319.0
245.9
220.1
180.8
147.4
119.0
25.1
75.1
5 c | 4.1
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0 | 4.2
0.7
0.1
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0 | 4.3
3.2
1.8
0.9
0.4
0.1
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0 |
4.4
8.5
5.6
3.5
2.1
1.1
0.5
0.2
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0
0.1
0.0
0
10.6
405.4
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
244.2
290.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
200.7
2 | 4.5
17.6
6.0
12.7
8.8
6.0
0.1
10.7
518.7
444.6
379.4
222.3
272.3
272.3
272.3
272.3
272.3
272.3
130.6 | 4.6
31.3
23.7
17.7
12.9
.1
6.3
4.1
2.6
0.0
0.8
10.8
55.3
301.9
255.3
301.9
255.3
301.9
255.3
301.9
255.3
301.9
255.3
214.6 | 13355
13355
13355
4.7
50.3
39.4
6.5
0.3
2.8
10.9
610.4
527.7
454.5
2.8
10.9
610.4
527.7
333.0
2.8
2.8
2.8
2.8
2.8
2.8
2.8
2.8 |
| 4.7
Estódio 2
X₀≡Db
10
10.3
10.4
10.3
10.4
10.5
10.6
10.7
10.6
10.7
10.8
10.7
10.8
10.7
10.8
8.8.1
8.8
8.4
8.5
8.6
8.9 | X;: | 3.8
1056322
10516.7
10478.5
10448.5
10448.5
104401.3
10425.6
10401.3
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
10413.0
1 | 39
10538.7
10549.1
10440.1
10440.1
10440.1
10440.1
10440.1
10440.1
10440.1
10440.1
10440.1
10440.1
10440.1
10452.1
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10352.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5
10355.5 |
U
4.0
10526.2
10376.4
10375.6
10397.5
10371.6
10335.4
10325.6
U
U
10323.3
10325.6
10323.3
10325.6
10323.3
10325.6
10323.3
10325.6
10335.4
10340.2
13383.6
13373.0
13373.0
13373.0
13373.0
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13473.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5
13475.5 | (X,X)=Q,
41
10511.5
1041.5
1041.5
1039.4
1039.4
1039.4
1039.4
1039.4
1039.4
1039.4
1039.0
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7
1030.7 | (X,)+R,(X,)
4.2
10523.4
10473.0
1034.5
1034.5
1034.5
1034.2
1032.7
10306.1
10312.7
10306.1
10312.7
10306.1
11300.3
113400.3
113307.3
113345.6
113370.3
113370.3 |
+52(%,%)
4.3
10532.1
10407.3
10407.3
10407.3
10407.3
10342.2
1038.4
10312.3
10308.8
10312.3
10308.8
10312.3
10308.8
10356.5
10366.4
10356.5
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4
10366.4 | U ¹ ₂ (X,)
4,4
10548,0
10495,2
10455,2
10435,4
10383,1
10391,4
10321,8
10321,8
10321,8
10321,8
10321,1
10321,8
10341,4
13365,5
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
1356,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
13365,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1356,2
1 | 4.5
10571.5
10516.6
10470.2
10431.6
10357.0
103574.7
135574.7
135574.7
135574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574.2
13574. | 4.6
10603.0
10545.4
10456.3
10456.3
10456.3
10377.5
10357.5
10357.5
10357.5
10352.0
10352.0
10352.0
10452.0
13453.2
13454.5
13454.5
13464.8
13364.7
13404.8
 | 47
10642.6
10581.9
10530.5
10487.6
10487.6
10487.6
10487.6
10487.4
10483.4
10374.8
10374.8
10374.7
13516.2
13579.2
13516.2
13579.2
13516.2
13579.2
13516.2
13579.2
13516.2
13579.2
13543.4
1343.9 | 2440.8
U2*(X2)
10521.5
10471.5
10393.4
10394.4
10394.6
10304.7
10304.1
10304.6
10304.6
10304.6
10304.7
10304.6
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10304.7
10404.7
10404.7
10404.7
1040 | 2159.1
Q ₂ (X ₃)
5740.1
5879.5
5879.7
6070.1
6070.9
6162.0
6233.4
6305.0
6337.0
2147.4
2148.8
2179.8
2179.8
2179.8
2179.8
2179.8
2179.8
2179.8
2179.8
2179.8
2179.8
2129.2
223.1
2245.9
2225.2
2237.0
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
2245.9
224 | 281.6
R ₃ (X ₃)
2411.4
2291.9
2179.5
2179.5
2179.3
1791.3
1791.3
1791.3
1791.3
1554.1
R ₃ (X ₃)
R ₃ (X ₃
)
S95.9
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
588.4
576.5
588.4
576.5
588.4
576.5
588.4
576.5
576.5
588.4
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
576.5
577.5
576.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5
577.5 | 10
5s[X_s,k]
3.8
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k]
5s[X_s,k] | 3.9
1.2
2.5
4.4
7.0
10.5
14.7
19.9
26.1
33.2
41.5
10.1
284.6
284.6
284.6
284.6
284.6
193.4
157.6
193.4
157.6
193.4
157.6
193.2
41.5 | 4.0
0.0
0.7
1.6
0.7
1.6
10.9
15.0
19.9
10.2
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9 | 4.1
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0 | 4.2
0.7
0.3
0.1
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0 | 4.3
3.2
1.8
0.9
0.4
0.1
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0
0.0 |
4.4
8.5
5.6
3.5
2.1
1.1
0.5
0.2
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0.1
0.0
0
10.6
475.2
405.4
344.2
290.7
244.2
203.9
169.1
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
139.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
140.2
1 | 4.5
17.6
12.7
8.8
6.0
3.8
2.3
0.7
0.0
0.1
0.1
0.1
0.1
0.1
0.1
0.1
0.1
0.1 | 4.6
31.3
23.7
17.7
9.1
6.3
7.7
12.9
9.1
6.3
12.9
9.1
6.3
4.1
2.6
0.0
0.8
0.8
0.8
0.8
0.8
0.8
0.8
0.8
0.8 | 13355
13355
13355
4.7
50.3
39.6
30.7
7.3,5
0.3
2.8
10.9
610.4
610.4
610.4
610.4
610.4
10.9
610.4
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9
10.9 |

Figura 3 - Funções utilidade: tabelas de cálculo.

No exemplo acima resulta a seguinte sequência de valores: o valor mínimo da função objetivo é obtido para o diâmetro da secção blindada (Da) de 8.5 m ao qual está associado o diâmetro da secção em betão (Db) de 10.5 m que, por sua vez, está ligado à largura da comporta de 4.1 m.

5. CASO DOS CIRCUITOS HIDRÁULICOS DO BAIXO SABOR

O AH do Baixo Sabor é constituído por dois escalões em cascata, cada um composto por uma barragem e por dois circuitos hidráulicos em túneis independentes que alimentam cada uma das turbinas reversíveis do tipo Francis.

No Escalão de Montante cada um dos circuitos hidráulicos foi dimensionado para caudais de 85 m³/s em turbinamento e 70 m³/s em bombagem e no escalão de Jusante os correspondentes valores são de 60 m³/s em turbinamento e 55 m³/s em bombagem.

Os circuitos hidráulicos a seguir apresentados são dois casos recentes de aplicação da metodologia anteriormente descrita.

5.1. Escalão de Montante

5.1.1. Breve Descrição dos Circuitos Hidráulicos

Esquematicamente, e de montante para jusante, cada um dos circuitos hidráulicos de adução é constituído por (Figuras 4 e 5):

- uma tomada de água, constituída por um bocal e uma torre de manobra das comportas;
- um trecho curto em galeria sub-horizontal;
- um poço inclinado a 60°;
- um trecho em galeria sub-horizontal, que inclui uma parte blindada;
- um curto elemento horizontal, também blindado, à entrada da espiral do grupo.

O diâmetro interior corrente da secção circular das galerias em carga é de 5.7 m na zona revestida a betão e de 4.4 m na zona blindada, valores resultantes dos estudos de dimensionamento económico, que a seguir se apresentam.

O trecho de galeria com revestimento a betão tem uma extensão total, entre o fim do quadrado-redondo da tomada de água e o início do cone de transição betãoblindagem, de 191.7 m, no circuito mais curto (G1), e de 280.8 m, no circuito mais longo (G2), correspondendo cerca de 46.3 m e 31.5 m aos comprimentos dos poços inclinados a 60°, respetivamente para G1 e G2.



Figura 4 - Escalão de Montante: planta geral dos circuitos hidráulicos.



Figura 5 - Escalão de Montante: perfis longitudinais dos circuitos hidráulicos e suportes tipo das secções transversais.

Foram definidos tipos de contenções e de revestimentos a aplicar em função da classificação geomecânica que caracteriza pelo índice RMR o maciço atravessado pelos circuitos hidráulicos. Inclui-se na Figura 5 um esquema dos suportes tipo previstos.

5.1.2. Dimensionamento Económico

Para o dimensionamento económico das secções transversais do circuito hidráulico utilizou se a metodologia descrita no capítulo 4.

Como variáveis a otimizar (variáveis de estado) foram consideradas:

- as dimensões da secção das comportas da tomada de água, l x h;
- o diâmetro do trecho em betão, Db;
- o diâmetro do trecho blindado, Da.
- Considerou-se uma discretização das variáveis de 10 cm.
- A interdependência entre estádios corresponde às perdas de energia nas transições entre cada uma das secções a que correspondem as variáveis, nomeadamente:
- transição do tipo "quadrado-redondo" que permite transformar o retângulo da secção da comporta para o círculo da secção do trecho corrente em betão;
- tronco de cone que permite transformar de forma gradual o círculo da secção do trecho corrente em betão para o círculo da secção blindada.

Para efeitos de dimensionamento económico considerou-se um período de exploração de 50 anos representado por três estádios de evolução do sistema eletroprodutor, cada um dos quais caracterizado por: volumes turbinados e bombados, tempos de utilização e custos específicos das perdas de energia.

Na Figura 6 apresenta-se a função objetivo e as relações entre as variáveis de estado ou de decisão otimizadas bem como os encargos totais correspondentes aos estádios a que cada uma delas se refere. A função objetivo, que corresponde à curva de encargos totais dados em função do diâmetro do trecho blindado, apresenta o seu valor mínimo para diâmetros do referido trecho entre 4.4 e 4.5 m. Os outros dois gráficos da mesma figura permitem constatar que para esses diâmetros do trecho blindado seria de adotar um diâmetro para o trecho em betão com 5.8 m e, para este valor, uma comporta com largura de 3.3 m.

As curvas de encargos totais para cada estádio permitem determinar os correspondentes valores ótimos das respetivas variáveis de decisão na hipótese de se realizar a otimização apenas até esse estádio. Assim, a otimização isolada da largura da comporta conduziria, conforme se observa do gráfico, a uma largura entre 3.0 e 3.1 m, inferior à resultante da otimização global, enquanto a inclusão adicional do trecho em betão levaria à fixação de um diâmetro para este trecho entre 5.9 e 6.0 m, superior ao que é obtido pela otimização global.



Figura 6 - Função objetivo e relação entre variáveis de decisão otimizadas.

As dimensões adotadas foram as seguintes:

- diâmetro dos trechos blindados, Db=4.4 m;
- diâmetro dos trechos em betão, Da=5.7 m;
- dimensões das comportas = 3.3 (l) x 6.0 (h) m².



Figura 7 - Superfície de encargos totais.

Tendo em vista a fixação dos valores das variáveis de decisão (dimensões a otimizar), realizou-se uma análise da superfície dos encargos totais em função das duas variáveis de decisão de ordem superior (X3 = Da,

diâmetro do trecho blindado ; X2 = Db, diâmetro do trecho em betão), representada na Figura 7.

Conforme se pode verificar o valor escolhido para o diâmetro dos trechos em betão não corresponde exatamente ao que é originado pela sequência ótima. No entanto, verificando se que a variação de encargos totais entre a hipótese (Da=4.4 ; Db=5.8) e a hipótese (Da=4.4 ; Db=5.7) é insignificante, optou-se pela solução que apresenta menores investimentos iniciais. Por outro lado, verifica-se que esta escolha não altera as dimensões ótimas das comportas.

5.2. Escalão de Jusante

5.2.1. Breve Descrição dos Circuitos Hidráulicos

Esquematicamente, e de montante para jusante, cada um dos circuitos hidráulicos de adução é constituído por (Figuras 8 e 9):

- uma tomada de água, constituída por um bocal, uma curta galeria de secção retangular e um poço de manobra das comportas;
- uma galeria em carga com secção circular, revestida com betão, com inclinações de 10% e 18%;
- um curto trecho em galeria horizontal, que inclui uma parte blindada, à entrada da espiral do grupo.



Figura 8 - Escalão de Jusante: planta geral dos circuitos hidráulicos.

As galerias em carga possuem um revestimento contínuo de betão armado, exceto num curto trecho que se inicia a cerca de 25 m do eixo dos grupos, onde o revestimento será blindado para garantir a estanqueidade da central.

O diâmetro interior corrente da secção circular das galerias em carga é de 4.8 m na zona revestida a betão e de 3.75 m na zona blindada, valores que resultaram dos estudos de dimensionamento económico apresentados no ponto seguinte. Observa-se que, conforme justificado adiante, se adotou para a blindagem um diâmetro igual ao da entrada da espiral.



Figura 9 - Escalão de Jusante: perfis longitudinais dos circuitos hidráulicos.

O trecho corrente de galeria com revestimento a betão tem uma extensão total de 109.9 m, no circuito mais curto (G1), e de 121.2 m, no circuito mais longo (G2), medida entre o fim do quadrado-redondo da tomada de água e o início do cone de transição betão-blindagem.

Ao trecho revestido a betão segue-se o cone de transição para a secção blindada, igual nas duas galerias em carga, com comprimento total de 6 m, com 2 m em betão e os 4 m restantes blindados.

O trecho corrente da blindagem, também com a mesma definição geométrica nos dois circuitos hidráulicos, tem cerca de 19.6 m de comprimento e termina na secção de entrada da espiral.

5.2.2. Dimensionamento Económico

À semelhança do referido para o Escalão de Montante, foi seguida a metodologia acima descrita, considerando idênticas variáveis a otimizar: diâmetro do trecho revestido a betão, Db; diâmetro do trecho blindado, Da; dimensões das secções de obturação da comporta e da ensecadeira da tomada de água, l x h. Idêntica discretização foi adotada, sendo as transições que determinam a interdependência entre as variáveis identicamente traduzida pelas transições quadradoredondo, entre comporta e secção em betão, e pela transição tronco-cónica entre secções betão-blindagem. Recorrendo a informação do tipo da apresentada na Figura 6, constatou-se que a função objetivo, que corresponde à curva de encargos totais dados em função do diâmetro do trecho blindado, apresenta o seu valor mínimo para diâmetros do referido trecho entre 4.0 e 4.1 m, concluindo-se que seria de adotar um diâmetro para o trecho em betão com 5.0 m e, para este valor, uma comporta com largura de 2.9 m.

Uma vez que o estudo efetuado conduziu a um diâmetro da blindagem de 4.0 m, e atendendo ao facto de o diâmetro de entrada da espiral ser de 3.75 m e de o comprimento da blindagem ser relativamente curto, efetuou-se um segundo estudo económico considerando o diâmetro do trecho blindado igual ao da entrada da espiral, hipótese que evita a construção de dois cones de transição, apesar de implicar um aumento das perda de carga nesse trecho. Esses custos não foram diretamente considerados no estudo, tendo-se admitido que os respetivos encargos de construção serão compensados pela diferença nos encargos totais referidos no parágrafo anterior.

Assim, procedeu-se à fixação das dimensões a otimizar com base na análise da superfície dos encargos totais em função das duas variáveis de decisão de ordem superior (X2 = Db, diâmetro do trecho em betão ; X1 = l, largura da comporta). A análise das isolinhas de encargos totais (Figura 10) para uma gama mais restrita em torno da zona correspondente aos encargos mínimos permite constatar que a minimização dos encargos é conseguida numa mancha em que a largura da comporta (l) varia entre 2.7 e 2.9 m e o diâmetro do trecho em betão (Db) varia entre 4.8 e 5.0 m, mancha que se centra no ponto com coordenadas l = 2.8 m e Db = 4.9 m.

No sentido de reduzir os encargos com a construção (investimento inicial), adotou-se o par de valores (Db = 4.8 m ; l = 2.8 m) em detrimento do par (Db = 4.9 m; l = 2.7 m), uma vez que, conduzem a encargos totais idênticos.





Figura 10 - Superfície (a) e isolinhas de encargos totais (b).



Observa-se que, a diferença dos encargos totais relativamente aos correspondentes aos valores que seriam adotados no caso de se considerar na otimização a variação do diâmetro do trecho blindado é reduzida.

De facto, verifica-se que os encargos totais correspondentes ao novo ponto ótimo (Db = 4.8 m ; l = 2.8 m) fixando o diâmetro do trecho blindado em 3.75 m (igual ao da entrada da espiral) é de cerca de 4339 k€, mais cerca de 18 k€ que o valor correspondente ao ponto ótimo resultante da otimização realizada admitindo variável o diâmetro do trecho blindado (Da = 4.1 m; Db = 5.0 m; l = 2.9 m).

Foram, assim, adotados os seguintes valores:

- Comporta: l = 2.8 m;
- h = 5.1 m;
- Troço em betão: Db = 4.8 m;
- Troço blindado: Da = 3.75 m.

6. CONCLUSÃO

Em circuitos hidráulicos com extensão reduzida, a função objetivo que corresponde à soma dos encargos totais associados à sua construção com os encargos referentes às perdas de energia, ambos atualizados a uma data de referência, contém parcelas cuja quantificação depende de mais do que uma das grandezas a otimizar implicando a utilização de métodos de otimização de funções de múltiplas variáveis.

A utilização de um algoritmo de Programação Dinâmica revelou-se adequado, de simples e compreensível aplicação prática, evidenciando flexibilidade suficiente para permitir análises com inclusão de condicionantes (fixação do valor de uma das variáveis).

BIBLIOGRAFIA

ASCE (1982) - Manual and Reports on Engineering Practice N.° 79 - Steel Penstocks.

Levin, L. (1968) - Formulaire des Conduits Forcées Oléoducs et Conduites d'Aération, Ed. Dunod.

Rao, S.S. (1979) - Optimization - Theory and applications, Wiley Eastern Limited.

Tavares, L.V. e Correia, F.N. (1986) - Optimização linear e não linear - conceitos, métodos e algoritmos, Fundação Calouste Gulbenkian, julho.