**Informações Iniciais:**

|  |
| --- |
| **MAX Z:  20x1 + 15x2 + 18x3  Regras:  5x1 + 3x2 + 5x3 <= 400 8x1 + 4x2 <= 500 2x1 + 5x2 + 3x3 <= 300 1x1 <= 40 1x2 <= 50 1x3 <= 20  Quantidade maxima iterações: 8** |

**Tabela Inicial:**

| **Base** | **x1** | **x2** | **x3** | **f1** | **f2** | **f3** | **f4** | **f5** | **f6** | **b** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **f1** | **5** | **3** | **5** | **1** | **0** | **0** | **0** | **0** | **0** | **400** |
| **f2** | **8** | **4** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **500** |
| **f3** | **2** | **5** | **3** | **0** | **0** | **1** | **0** | **0** | **0** | **300** |
| **f4** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **40** |
| **f5** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **50** |
| **f6** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **20** |
| **z** | **-20** | **-15** | **-18** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Iteracao: 1**

**Menor valor encontrado: -20**

**Efetuando divisão:**

|  |
| --- |
| **Regras:  1\* - f1 - 80 2\* - f2 - 62.5 3\* - f3 - 150 4\* - f4 - 40 5\* - Não efetua divisão 6\* - Não efetua divisão** |

**Menor valor encontrado apos a divisao: 40**

**Entra: x1 Sai: f4**

**Pivo: 1**

**Tabela Após dividir pelo pivo:**

| **Base** | **x1** | **x2** | **x3** | **f1** | **f2** | **f3** | **f4** | **f5** | **f6** | **b** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **f1** | **5** | **3** | **5** | **1** | **0** | **0** | **0** | **0** | **0** | **400** |
| **f2** | **8** | **4** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **500** |
| **f3** | **2** | **5** | **3** | **0** | **0** | **1** | **0** | **0** | **0** | **300** |
| **x1** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **40** |
| **f5** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **50** |
| **f6** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **20** |
| **z** | **-20** | **-15** | **-18** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Tabela Após processo de divisao por linha:**

**Processo Linha: 1**

**ValorEspecial: -5**

**1 \* -5 + 5 = 0**

**0 \* -5 + 3 = 3**

**0 \* -5 + 5 = 5**

**0 \* -5 + 1 = 1**

**0 \* -5 + 0 = 0**

**0 \* -5 + 0 = 0**

**1 \* -5 + 0 = -5**

**0 \* -5 + 0 = 0**

**0 \* -5 + 0 = 0**

**40 \* -5 + 400 = 200**

**Processo Linha: 2**

**ValorEspecial: -8**

**1 \* -8 + 8 = 0**

**0 \* -8 + 4 = 4**

**0 \* -8 + 0 = 0**

**0 \* -8 + 0 = 0**

**0 \* -8 + 1 = 1**

**0 \* -8 + 0 = 0**

**1 \* -8 + 0 = -8**

**0 \* -8 + 0 = 0**

**0 \* -8 + 0 = 0**

**40 \* -8 + 500 = 180**

**Processo Linha: 3**

**ValorEspecial: -2**

**1 \* -2 + 2 = 0**

**0 \* -2 + 5 = 5**

**0 \* -2 + 3 = 3**

**0 \* -2 + 0 = 0**

**0 \* -2 + 0 = 0**

**0 \* -2 + 1 = 1**

**1 \* -2 + 0 = -2**

**0 \* -2 + 0 = 0**

**0 \* -2 + 0 = 0**

**40 \* -2 + 300 = 220**

**Processo Linha: 7**

**ValorEspecial: 20**

**1 \* 20 + -20 = 0**

**0 \* 20 + -15 = -15**

**0 \* 20 + -18 = -18**

**0 \* 20 + 0 = 0**

**0 \* 20 + 0 = 0**

**0 \* 20 + 0 = 0**

**1 \* 20 + 0 = 20**

**0 \* 20 + 0 = 0**

**0 \* 20 + 0 = 0**

**40 \* 20 + 0 = 800**

**Tabela final da iteracao:**

| **Base** | **x1** | **x2** | **x3** | **f1** | **f2** | **f3** | **f4** | **f5** | **f6** | **b** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **f1** | **0** | **3** | **5** | **1** | **0** | **0** | **-5** | **0** | **0** | **200** |
| **f2** | **0** | **4** | **0** | **0** | **1** | **0** | **-8** | **0** | **0** | **180** |
| **f3** | **0** | **5** | **3** | **0** | **0** | **1** | **-2** | **0** | **0** | **220** |
| **x1** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **40** |
| **f5** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **50** |
| **f6** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **20** |
| **z** | **0** | **-15** | **-18** | **0** | **0** | **0** | **20** | **0** | **0** | **800** |

**Iteracao: 2**

**Menor valor encontrado: -18**

**Efetuando divisão:**

|  |
| --- |
| **Regras:  1\* - f1 - 40 2\* - Não efetua divisão 3\* - f3 - 73.333333333333 4\* - Não efetua divisão 5\* - Não efetua divisão 6\* - f6 - 20** |

**Menor valor encontrado apos a divisao: 20**

**Entra: x3 Sai: f6**

**Pivo: 1**

**Tabela Após dividir pelo pivo:**

| **Base** | **x1** | **x2** | **x3** | **f1** | **f2** | **f3** | **f4** | **f5** | **f6** | **b** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **f1** | **0** | **3** | **5** | **1** | **0** | **0** | **-5** | **0** | **0** | **200** |
| **f2** | **0** | **4** | **0** | **0** | **1** | **0** | **-8** | **0** | **0** | **180** |
| **f3** | **0** | **5** | **3** | **0** | **0** | **1** | **-2** | **0** | **0** | **220** |
| **x1** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **40** |
| **f5** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **50** |
| **x3** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **20** |
| **z** | **0** | **-15** | **-18** | **0** | **0** | **0** | **20** | **0** | **0** | **800** |

**Tabela Após processo de divisao por linha:**

**Processo Linha: 1**

**ValorEspecial: -5**

**0 \* -5 + 0 = 0**

**0 \* -5 + 3 = 3**

**1 \* -5 + 5 = 0**

**0 \* -5 + 1 = 1**

**0 \* -5 + 0 = 0**

**0 \* -5 + 0 = 0**

**0 \* -5 + -5 = -5**

**0 \* -5 + 0 = 0**

**1 \* -5 + 0 = -5**

**20 \* -5 + 200 = 100**

**Processo Linha: 3**

**ValorEspecial: -3**

**0 \* -3 + 0 = 0**

**0 \* -3 + 5 = 5**

**1 \* -3 + 3 = 0**

**0 \* -3 + 0 = 0**

**0 \* -3 + 0 = 0**

**0 \* -3 + 1 = 1**

**0 \* -3 + -2 = -2**

**0 \* -3 + 0 = 0**

**1 \* -3 + 0 = -3**

**20 \* -3 + 220 = 160**

**Processo Linha: 7**

**ValorEspecial: 18**

**0 \* 18 + 0 = 0**

**0 \* 18 + -15 = -15**

**1 \* 18 + -18 = 0**

**0 \* 18 + 0 = 0**

**0 \* 18 + 0 = 0**

**0 \* 18 + 0 = 0**

**0 \* 18 + 20 = 20**

**0 \* 18 + 0 = 0**

**1 \* 18 + 0 = 18**

**20 \* 18 + 800 = 1160**

**Tabela final da iteracao:**

| **Base** | **x1** | **x2** | **x3** | **f1** | **f2** | **f3** | **f4** | **f5** | **f6** | **b** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **f1** | **0** | **3** | **0** | **1** | **0** | **0** | **-5** | **0** | **-5** | **100** |
| **f2** | **0** | **4** | **0** | **0** | **1** | **0** | **-8** | **0** | **0** | **180** |
| **f3** | **0** | **5** | **0** | **0** | **0** | **1** | **-2** | **0** | **-3** | **160** |
| **x1** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **40** |
| **f5** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **50** |
| **x3** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **20** |
| **z** | **0** | **-15** | **0** | **0** | **0** | **0** | **20** | **0** | **18** | **1160** |

**Iteracao: 3**

**Menor valor encontrado: -15**

**Efetuando divisão:**

|  |
| --- |
| **Regras:  1\* - f1 - 33.333333333333 2\* - f2 - 45 3\* - f3 - 32 4\* - Não efetua divisão 5\* - f5 - 50 6\* - Não efetua divisão** |

**Menor valor encontrado apos a divisao: 32**

**Entra: x2 Sai: f3**

**Pivo: 5**

**Tabela Após dividir pelo pivo:**

| **Base** | **x1** | **x2** | **x3** | **f1** | **f2** | **f3** | **f4** | **f5** | **f6** | **b** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **f1** | **0** | **3** | **0** | **1** | **0** | **0** | **-5** | **0** | **-5** | **100** |
| **f2** | **0** | **4** | **0** | **0** | **1** | **0** | **-8** | **0** | **0** | **180** |
| **x2** | **0** | **1** | **0** | **0** | **0** | **0.2** | **-0.4** | **0** | **-0.6** | **32** |
| **x1** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **40** |
| **f5** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **50** |
| **x3** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **20** |
| **z** | **0** | **-15** | **0** | **0** | **0** | **0** | **20** | **0** | **18** | **1160** |

**Tabela Após processo de divisao por linha:**

**Processo Linha: 1**

**ValorEspecial: -3**

**0 \* -3 + 0 = 0**

**1 \* -3 + 3 = 0**

**0 \* -3 + 0 = 0**

**0 \* -3 + 1 = 1**

**0 \* -3 + 0 = 0**

**0.2 \* -3 + 0 = -0.6**

**-0.4 \* -3 + -5 = -3.8**

**0 \* -3 + 0 = 0**

**-0.6 \* -3 + -5 = -3.2**

**32 \* -3 + 100 = 4**

**Processo Linha: 2**

**ValorEspecial: -4**

**0 \* -4 + 0 = 0**

**1 \* -4 + 4 = 0**

**0 \* -4 + 0 = 0**

**0 \* -4 + 0 = 0**

**0 \* -4 + 1 = 1**

**0.2 \* -4 + 0 = -0.8**

**-0.4 \* -4 + -8 = -6.4**

**0 \* -4 + 0 = 0**

**-0.6 \* -4 + 0 = 2.4**

**32 \* -4 + 180 = 52**

**Processo Linha: 5**

**ValorEspecial: -1**

**0 \* -1 + 0 = 0**

**1 \* -1 + 1 = 0**

**0 \* -1 + 0 = 0**

**0 \* -1 + 0 = 0**

**0 \* -1 + 0 = 0**

**0.2 \* -1 + 0 = -0.2**

**-0.4 \* -1 + 0 = 0.4**

**0 \* -1 + 1 = 1**

**-0.6 \* -1 + 0 = 0.6**

**32 \* -1 + 50 = 18**

**Processo Linha: 7**

**ValorEspecial: 15**

**0 \* 15 + 0 = 0**

**1 \* 15 + -15 = 0**

**0 \* 15 + 0 = 0**

**0 \* 15 + 0 = 0**

**0 \* 15 + 0 = 0**

**0.2 \* 15 + 0 = 3**

**-0.4 \* 15 + 20 = 14**

**0 \* 15 + 0 = 0**

**-0.6 \* 15 + 18 = 9**

**32 \* 15 + 1160 = 1640**

**Tabela final da iteracao:**

| **Base** | **x1** | **x2** | **x3** | **f1** | **f2** | **f3** | **f4** | **f5** | **f6** | **b** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **f1** | **0** | **0** | **0** | **1** | **0** | **-0.6** | **-3.8** | **0** | **-3.2** | **4** |
| **f2** | **0** | **0** | **0** | **0** | **1** | **-0.8** | **-6.4** | **0** | **2.4** | **52** |
| **x2** | **0** | **1** | **0** | **0** | **0** | **0.2** | **-0.4** | **0** | **-0.6** | **32** |
| **x1** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **40** |
| **f5** | **0** | **0** | **0** | **0** | **0** | **-0.2** | **0.4** | **1** | **0.6** | **18** |
| **x3** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **20** |
| **z** | **0** | **0** | **0** | **0** | **0** | **3** | **14** | **0** | **9** | **1640** |

**Variaveis Básicas:**

**f1 = 4**

**f2 = 52**

**x2 = 32**

**x1 = 40**

**f5 = 18**

**x3 = 20**

**z = 1640**

**Variaveis Não Básicas:**

**f3 = 0**

**f4 = 0**

**f6 = 0**

**Tabela Final:**

| **Base** | **x1** | **x2** | **x3** | **f1** | **f2** | **f3** | **f4** | **f5** | **f6** | **b** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **f1** | **0** | **0** | **0** | **1** | **0** | **-0.6** | **-3.8** | **0** | **-3.2** | **4** |
| **f2** | **0** | **0** | **0** | **0** | **1** | **-0.8** | **-6.4** | **0** | **2.4** | **52** |
| **x2** | **0** | **1** | **0** | **0** | **0** | **0.2** | **-0.4** | **0** | **-0.6** | **32** |
| **x1** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **40** |
| **f5** | **0** | **0** | **0** | **0** | **0** | **-0.2** | **0.4** | **1** | **0.6** | **18** |
| **x3** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **20** |
| **z** | **0** | **0** | **0** | **0** | **0** | **3** | **14** | **0** | **9** | **1640** |

**Analise de Sensibilidade:**

| **-** | **Valor Fim** | **Preço Sombra** | **MIN** | **MAX** |
| --- | --- | --- | --- | --- |
| **R1** | **4** | **0** | **4** | **4** |
| **R2** | **52** | **0** | **52** | **52** |
| **R3** | **32** | **3** | **-128** | **38.666666666667** |
| **R4** | **40** | **14** | **0** | **41.052631578947** |
| **R5** | **18** | **0** | **18** | **18** |
| **R6** | **20** | **9** | **0** | **21.25** |