**Бутенко Александр. Т-409-13**

**Задача 1.**

Математическая модель объекта – это его гомоморфное отображение в виде совокупности уравнений, неравенств, логических отношений, графиков, т.е. условный образ объекта, созданный для упрощения его исследования, получения о нем новых знаний, определения и оценки принимаемых решений в конкретных или возможных ситуациях.

**Задача 2.**

|  |  |  |
| --- | --- | --- |
|  | I | II |
| A | 4 | 2 |
| B | 3 | 1 |
| C | 0 | 1 |
|  | 6 | 5 |

**Задача 3.**



**Задача 4.**

4x1 + 2x2 + 1x3 + 0x4 + 0x5 = 350  
3x1 + 1x2 + 0x3 + 1x4 + 0x5 = 600  
0x1 + 1x2 + 0x3 + 0x4 + 1x5 = 200

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| A = | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  | | --- | --- | --- | --- | --- | | 4 | 2 | 1 | 0 | 0 | | 3 | 1 | 0 | 1 | 0 | | 0 | 1 | 0 | 0 | 1 | | |
|  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Базис | B | x1 | x2 | x3 | x4 | x5 |
| x3 | 350 | 4 | 2 | 1 | 0 | 0 |
| x4 | 600 | 3 | 1 | 0 | 1 | 0 |
| x5 | 200 | 0 | 1 | 0 | 0 | 1 |
| F(X0) | 0 | -6 | -5 | 0 | 0 | 0 |

**Задача 5.**

**Задача 6.**



**Задача 7.**

**Задача 8.**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Базис** | **Cвоб. пер.** | **Х1** | **Х2** | **Х3** | **Х4** | **Х5** | **Х6** | **O** |
| **Х4** | 5 | 10 | 1 | 0 | 1 | 0 | 0 | 5/1 |
| **Х5** | 8 | 12 | 0 | 2 | 0 | 1 | 0 | 8/0 |
| **Х6** | 6 | 10 | 2 | 4 | 0 | 0 | 1 | 6/2 |
| L | 0 | 2 | -6 | -3 | 0 | 0 | 0 |  |

**Задача 9.**

**Задача 10.**

2x1 + 5x2-1x3 + 0x4 + 0x5 = 9  
1x1 + 2x2 + 0x3-1x4 + 0x5 = 8  
1x1 + 1x2 + 0x3 + 0x4-1x5 = 12

Сводим к максимуму

-2x1-5x2 + 1x3 + 0x4 + 0x5 = -9  
-1x1-2x2 + 0x3 + 1x4 + 0x5 = -8  
-1x1-1x2 + 0x3 + 0x4 + 1x5 = -12  
F(x) = -4x1-3x2

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| A = | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  | | --- | --- | --- | --- | --- | | -2 | -5 | 1 | 0 | 0 | | -1 | -2 | 0 | 1 | 0 | | -1 | -1 | 0 | 0 | 1 | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Базис | B | x1 | x2 | x3 | x4 | x5 |
| x3 | -9 | -2 | -5 | 1 | 0 | 0 |
| x4 | -8 | -1 | -2 | 0 | 1 | 0 |
| x5 | -12 | -1 | -1 | 0 | 0 | 1 |
| F(X0) | 0 | 4 | 3 | 0 | 0 | 0 |

**Задача 11.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | Запасы |
| 1 | 70[170] | 50[100] | 15[30] | 80 | 70 | 300 |
| 2 | 80 | 40 | 40[70] | 60[80] | 85 | 150 |
| 3 | 50 | 10 | 90 | 10[50] | 25[200] | 250 |
| Потребности | 170 | 100 | 100 | 130 | 200 |  |

**Задача 12.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | Запасы |
| 1 | 70[170] | 50 | 15[100] | 80 | 70[30] | 300 |
| 2 | 80 | 40 | 40 | 60 | 85[150] | 150 |
| 3 | 50 | 10[100] | 90 | 10[130] | 25[20] | 250 |
| Потребности | 170 | 100 | 100 | 130 | 200 |  |

**Задача 13.**

**Задача 14.**



**Задача 15.**

|  |  |  |
| --- | --- | --- |
| 4,00 | -3,00 | 9,00 |
| -1,00 | 5,00 | 4,00 |
| -7,00 | 15,00 | -3,00 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Байес | Лаплас | Вальд | Гурвиц | Сэвидж |
| 2,00 | 3,33 | 9,00 | 7,60 | 18,00 |
| 2,00 | 2,67 | 5,00 | 4,80 | 16,00 |
| 0,00 | 1,67 | 15,00 | 11,20 | 22,00 |
|  |  |  |  |  |
| 2,00 | 1,67 | 5,00 | 11,20 | 16,00 |
| 1 и 2 | 3 | 2 | 3 | 2 |