**Домашняя работа по дискретной математике №5**

**Вариант 168**

**Работу выполнил:** Храбров Артём Р3115

Граф G1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **V/V** | **x1** | **x2** | **x3** | **x4** | **x5** | **x6** | **x7** | **x8** | **x9** | **x10** | **x11** | **x12** | **Px** |
| **x1** | 0 | 1 | 1 |  | 1 |  | 1 | 1 | 1 | 1 | 1 | 1 | **9** |
| **x2** | 1 | 0 | 1 | 1 |  | 1 | 1 |  | 1 | 1 |  |  | **7** |
| **x3** | 1 | 1 | 0 | 1 | 1 | 1 |  |  |  | 1 | 1 |  | **7** |
| **x4** |  | 1 | 1 | 0 |  | 1 | 1 |  | 1 |  | 1 |  | **6** |
| **x5** | 1 |  | 1 |  | 0 |  | 1 |  | 1 |  | 1 | 1 | **6** |
| **x6** |  | 1 | 1 | 1 |  | 0 |  | 1 | 1 |  |  |  | **5** |
| **x7** | 1 | 1 |  | 1 | 1 |  | 0 |  | 1 |  |  |  | **5** |
| **x8** | 1 |  |  |  |  | 1 |  | 0 | 1 |  | 1 |  | **4** |
| **x9** | 1 | 1 |  | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | **10** |
| **x10** | 1 | 1 | *1* |  |  |  |  |  | 1 | 0 |  | 1 | **5** |
| **x11** | 1 |  | 1 | 1 | 1 |  |  | 1 | 1 |  | 0 |  | **6** |
| **x12** | 1 |  |  |  | 1 |  |  |  | 1 | 1 |  | 0 | **4** |

Граф G2

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **V/V** | **y1** | **y2** | **y3** | **y4** | **y5** | **y6** | **y7** | **y8** | **y9** | **y10** | **y11** | **y12** | **Py** |
| **y1** | 0 | 1 | 1 |  |  | 1 | 1 | 1 | 1 | 1 | 1 | 1 | **9** |
| **y2** | 1 | 0 | 1 | 1 | 1 |  |  |  | 1 | 1 | 1 |  | **7** |
| **y3** | 1 | 1 | 0 | 1 | 1 |  | 1 | 1 |  |  | 1 |  | **7** |
| **y4** |  | 1 | 1 | 0 | 1 |  | 1 |  | 1 | 1 |  |  | **6** |
| **y5** |  | 1 | 1 | 1 | 0 | 1 |  |  |  | 1 |  |  | **5** |
| **y6** | 1 |  |  |  | 1 | 0 | 1 |  |  | 1 |  |  | **4** |
| **y7** | 1 |  | 1 | 1 |  | 1 | 0 | 1 |  | 1 |  |  | **6** |
| **y8** | 1 |  | 1 |  |  |  | 1 | 0 | 1 | 1 |  | 1 | **6** |
| **y9** | 1 | 1 |  | 1 |  |  |  | 1 | 0 | 1 |  |  | **5** |
| **y10** | 1 | 1 |  | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | **10** |
| **y11** | 1 | 1 | 1 |  |  |  |  |  |  | 1 | 0 | 1 | **5** |
| **y12** | 1 |  |  |  |  |  |  | 1 |  | 1 | 1 | 0 | **4** |

Для графа G1 Σρ(x)=74. Список Ρ(x) = {9, 7, 7, 6, 6, 5, 5, 4, 10, 5, 6, 4}.

Для графа G2 Σρ(y)=74. Список Ρ(y) = {9, 7, 7, 6, 5, 4, 6, 6, 5, 10, 5, 4}.

Разобьем вершины обоих графов на классы по их степеням

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | p(x) = p(y) = 10 | p(x) = p(y) = 9 | p(x) = p(y) = 7 | p(x) = p(y) = 6 | p(x) = p(y) = 5 | p(x) = p(y) = 4 |
| X | X9 | X1 | X2, X3 | X4, X5, X11 | X6, X7, X10 | X8, X12 |
| Y | Y10 | Y1 | Y2, Y3 | Y4, Y7, Y8 | Y5, Y9, Y11 | Y6, Y12 |

Из таблицы сразу видно соответствие вершин графов

|  |  |
| --- | --- |
| X | Y |
| X9 | Y10 |
| X1 | Y1 |

Для определения соответствия вершин с ρ(x) =ρ(y) = 7 попробуем связать с установленными вершинами из ρ(x) =ρ(y) = 10

|  |  |  |  |
| --- | --- | --- | --- |
| X | | Y | |
| x9 | X3  X2 | y10 | Y3  Y2 |

Анализ связей показывает следующее соответствие:

|  |  |
| --- | --- |
| X | Y |
| X9 | Y10 |
| X1 | Y1 |
| X2 | Y2 |
| X3 | Y3 |