Лабораторная работа № 6 по КДМ

1. Генерация варианта

S = Лысенко А~~н~~т~~он~~ ~~Се~~рг~~ее~~вич

S = Л Ы С Е Н К О А Т Р Г В И Ч

N(Si) = 13 28 19 6 15 12 16 1 20 18 4 3 10 25

Y :

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| i/j | 13 | 28 | 19 | 6 | 15 | 12 | 16 | 1 | 20 | 18 | 4 | 3 | 10 |
| 13 | 0 | -15 | -6 | 7 | -2 | 1 | -3 | 12 | -7 | -5 | 9 | 10 | 3 |
| 28 | 15 | 0 | 9 | 22 | 13 | 16 | 12 | 27 | 8 | 10 | 24 | 25 | 18 |
| 19 | 6 | -9 | 0 | 13 | 4 | 7 | 3 | 18 | -1 | 1 | 15 | 16 | 9 |
| 6 | -7 | -22 | -13 | 0 | -9 | -6 | -10 | 5 | -14 | -12 | 2 | 3 | -4 |
| 15 | 2 | -13 | -4 | -9 | 0 | 3 | -1 | 14 | -5 | -3 | 9 | 12 | 5 |
| 12 | -1 | -16 | -7 | 6 | -3 | 0 | -4 | 11 | -8 | -6 | 8 | 9 | 2 |
| 16 | 3 | -12 | -3 | 10 | 1 | 4 | 0 | 15 | -4 | -2 | 12 | 13 | 6 |
| 1 | -12 | -27 | -18 | -5 | -14 | -11 | -15 | 0 | -19 | -17 | -3 | -2 | -9 |
| 20 | 7 | -8 | 1 | 14 | 5 | 8 | 4 | 19 | 0 | 2 | 16 | 17 | 10 |
| 18 | 5 | -10 | -1 | 12 | 3 | 6 | 2 | 17 | -2 | 0 | 14 | 15 | 8 |
| 4 | -9 | -24 | -15 | -2 | -11 | -8 | -12 | 3 | -16 | -14 | 0 | 1 | -6 |
| 3 | -10 | -25 | -16 | -3 | -12 | -9 | -13 | 2 | -17 | -15 | -1 | 0 | -7 |
| 10 | -3 | -18 | -9 | 4 | -5 | -2 | -6 | 9 | -10 | -8 | 6 | 7 | 0 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| i/j | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 |
| 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 7 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |
| 8 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 10 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 11 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 12 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 13 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |

Граф G :

Все вершины – и отходящие от них :

1 – 2, 3, 8, 10, 12;

2 – 1, 7, 10, 11, 12, 13;

3 – 1, 8, 11;

4 – 6, 7, 8, 10;

5 – 9, 12, 13;

6 – 4, 10;

7 – 2, 4, 8, 11, 13;

8 – 1, 3, 4, 7;

9 – 5, 13;

10 – 1, 2, 4, 6, 12;

11 – 2, 3, 7, 13;

12 – 1, 2, 5, 10;

13 – 2, 5, 7, 9, 11;

Критерий планарности Понтрягина-Куратовского

(1-2),(11-3),(8-4),(6-10-12),(5-9),(13-7);

Можно сократить до 1 – 7;

2 вершины – то есть K2;

Критерий планарности Вагнера

Вершины : (1-2), (11-3), (8-4), (10-12), (5-9), (13-7) – можно объединить и того получается 6 вершин - то есть K6;

Граф G : планарен – G1;

Удалив два ребра (1-2) и (2-11) получаем K5 – то есть наш граф является непланарен.

– выберем в графе произвольный простой цикл и уложим его на плоскости

Г2

Г1

- определили множество граней

- определим сегменты S1

Уложим сегмент в одной из допустимых граней

Г2

Г1

Г3