## Дискретная математика. Задание 2

[369074] Шишминцев Дмитрий Р3215

## Исходный граф:

|     | e1 | e2 | e3 | e4 | e5 | e6 | e7 | e8 | e9 | e10 | e11 | e12 |
|-----|----|----|----|----|----|----|----|----|----|-----|-----|-----|
| e1  | 0  | 4  |    | 2  | 1  |    |    |    | 2  |     |     | 2   |
| e2  | 4  | 0  |    | 3  | 1  |    | 3  |    | 4  | 5   |     | 2   |
| e3  |    |    | 0  |    |    | 3  |    | 2  | 5  | 5   |     |     |
| e4  | 2  | 3  |    | 0  | 1  |    | 2  | 4  | 4  |     | 5   | 1   |
| e5  | 1  | 1  |    | 1  | 0  | 1  |    |    | 3  |     | 1   |     |
| e6  |    |    | 3  |    | 1  | 0  |    | 4  | 4  | 3   |     | 2   |
| e7  |    | 3  |    | 2  |    |    | 0  | 3  |    | 4   | 1   | 4   |
| e8  |    |    | 2  | 4  |    | 4  | 3  | 0  | 2  | 4   | 4   | 3   |
| e9  | 2  | 4  | 5  | 4  | 3  | 4  |    | 2  | 0  |     |     | 1   |
| e10 |    | 5  | 5  |    |    | 3  | 4  | 4  |    | 0   | 1   |     |
| e11 |    |    |    | 5  | 1  |    | 1  | 4  |    | 1   | 0   | 2   |
| e12 | 2  | 2  |    | 1  |    | 2  | 4  | 3  | 1  |     | 2   | 0   |

## Решение алгоритмом Дейкстры:

| W | e2  | e3  | e4  | e5  | e6  | e7  | e8  | e9  | e10 | e11 | e12 |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | inf |
| 5 | 4   | inf | 2   | 1   | inf | inf | inf | 2   | inf | inf | 2   |
| 2 | 2   | inf | 2   | 1   | 2   | inf | inf | 2   | inf | 2   | 2   |

| 4  | 2 | inf | 2 | 1 | 2 | 5 | inf | 2 | 7 | 2 | 2 |
|----|---|-----|---|---|---|---|-----|---|---|---|---|
| 6  | 2 | 5   | 2 | 1 | 2 | 4 | 6   | 2 | 7 | 2 | 2 |
| 9  | 2 | 5   | 2 | 1 | 2 | 4 | 6   | 2 | 7 | 2 | 2 |
| 11 | 2 | 5   | 2 | 1 | 2 | 4 | 4   | 2 | 7 | 2 | 2 |
| 12 | 2 | 5   | 2 | 1 | 2 | 3 | 4   | 2 | 3 | 2 | 2 |
| 7  | 2 | 5   | 2 | 1 | 2 | 3 | 4   | 2 | 3 | 2 | 2 |
| 10 | 2 | 5   | 2 | 1 | 2 | 3 | 4   | 2 | 3 | 2 | 2 |
| 8  | 2 | 5   | 2 | 1 | 2 | 3 | 4   | 2 | 3 | 2 | 2 |
| 3  | 2 | 5   | 2 | 1 | 2 | 3 | 4   | 2 | 3 | 2 | 2 |

## Результат:

| Начальная точка | Конечная точка | Длинна |
|-----------------|----------------|--------|
| 1               | 2              | 2      |
| 1               | 3              | 5      |
| 1               | 4              | 2      |
| 1               | 5              | 1      |
| 1               | 6              | 2      |
| 1               | 7              | 3      |
| 1               | 8              | 4      |
| 1               | 9              | 2      |
| 1               | 10             | 3      |
| 1               | 11             | 2      |
| 1               | 12             | 2      |