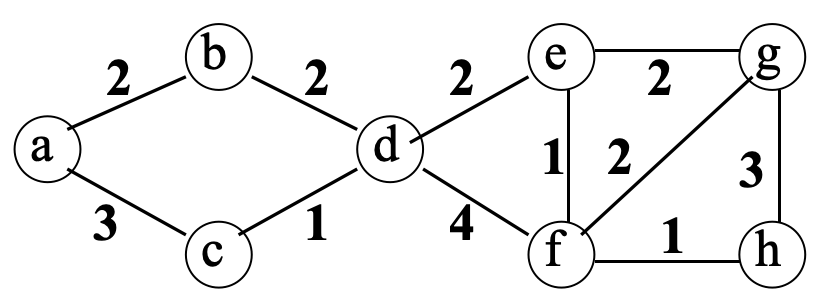
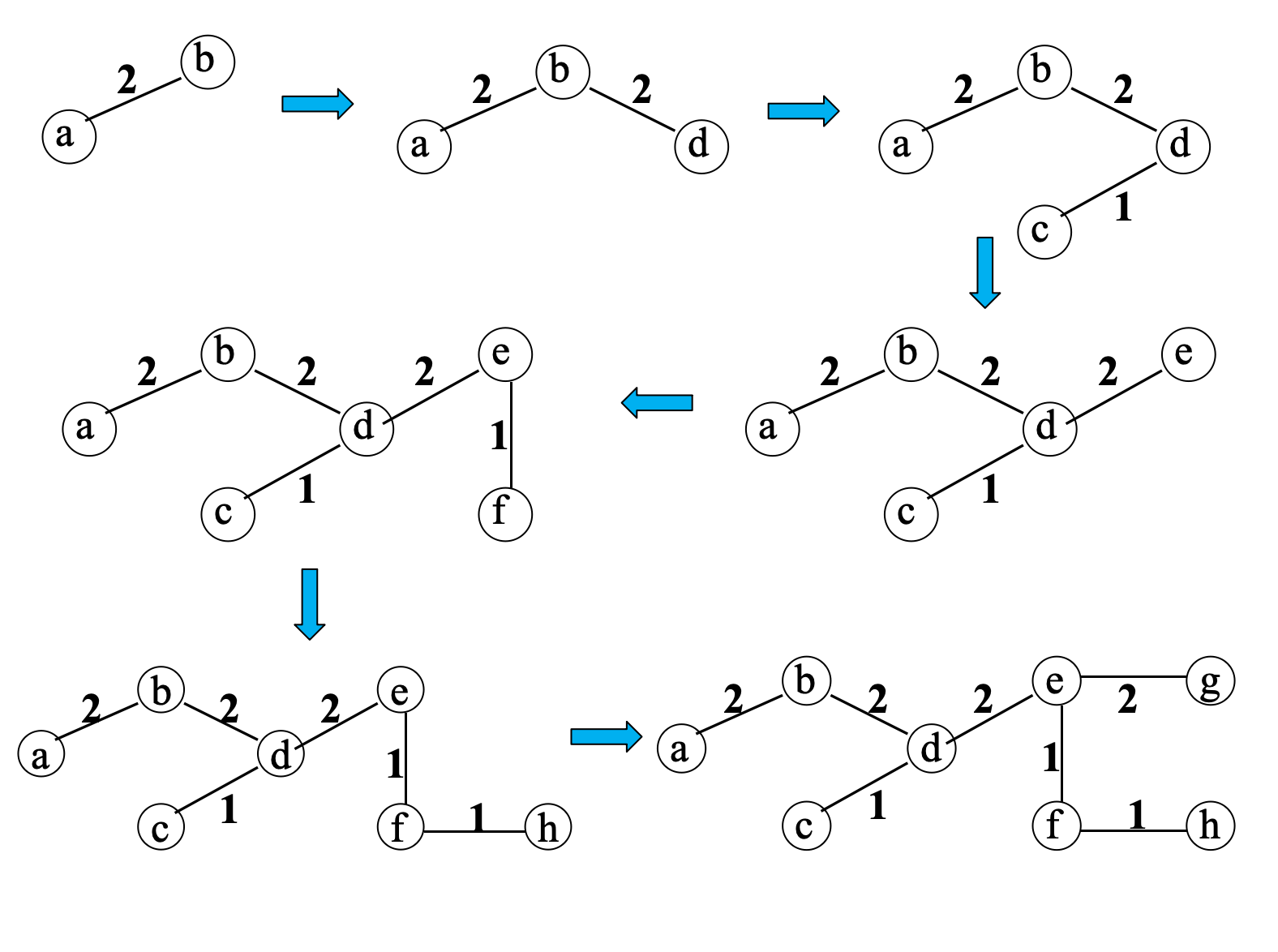
1. **给出下面无向网的邻接矩阵，并按普里姆算法求其最小代价生成树；给出其邻接表，再按克鲁斯卡尔算法求其最小代价生成树。**



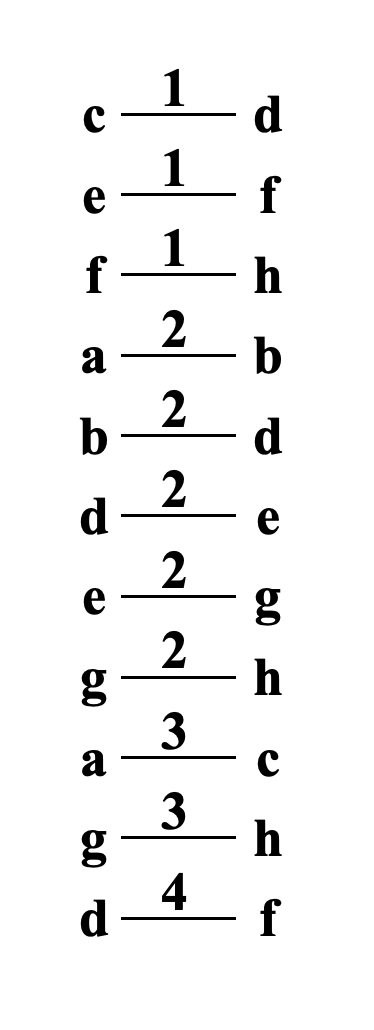
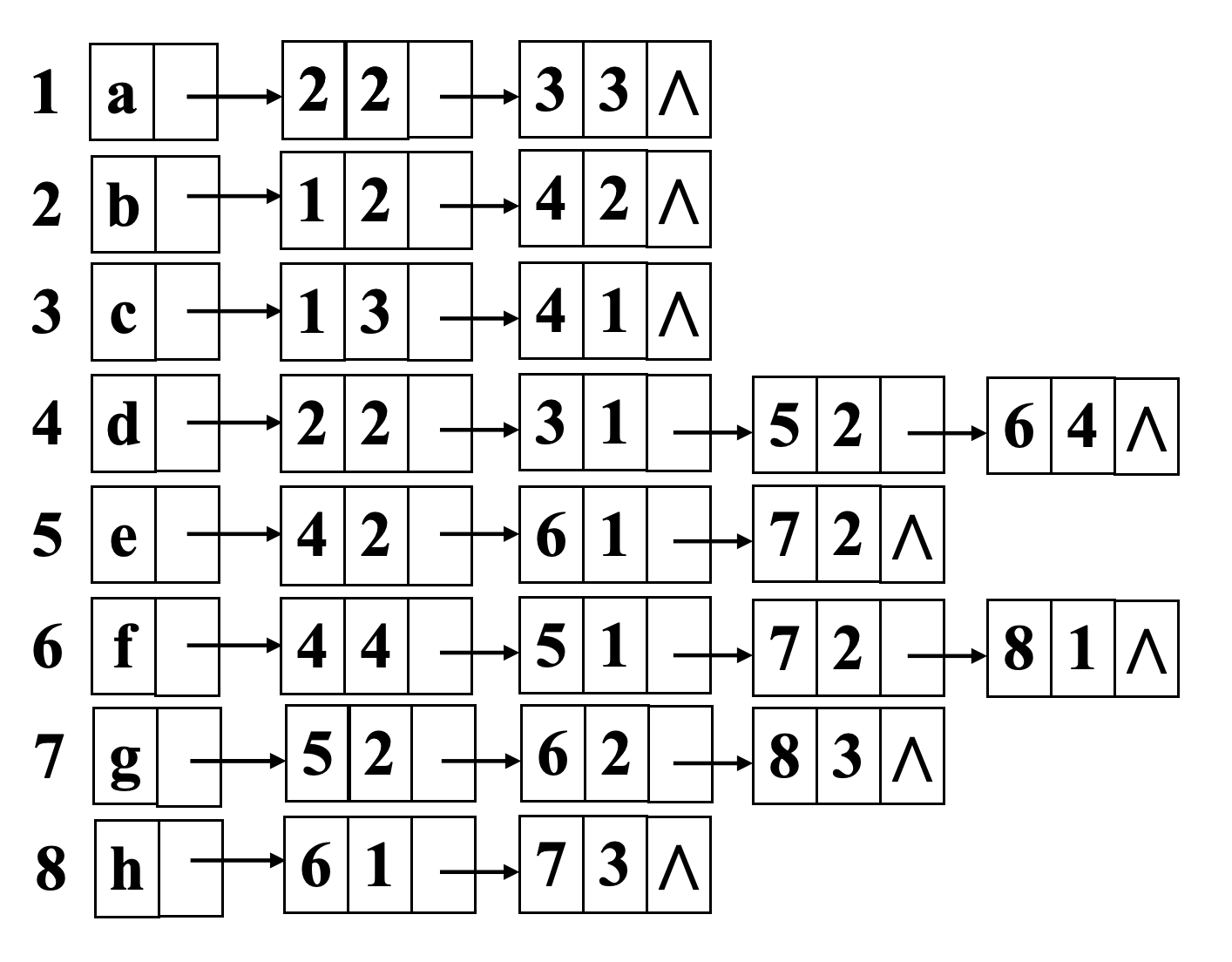
邻接矩阵：

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | a | b | c | d | e | f | g | h |
| a | 0 | 2 | 3 | ∞ | ∞ | ∞ | ∞ | ∞ |
| b | 2 | 0 | ∞ | 2 | ∞ | ∞ | ∞ | ∞ |
| c | 3 | ∞ | 0 | 1 | ∞ | ∞ | ∞ | ∞ |
| d | ∞ | 2 | 1 | 0 | 2 | 4 | ∞ | ∞ |
| e | ∞ | ∞ | ∞ | 2 | 0 | 1 | 2 | ∞ |
| f | ∞ | ∞ | ∞ | 4 | 1 | 0 | 2 | 1 |
| g | ∞ | ∞ | ∞ | ∞ | 2 | 2 | 0 | 3 |
| h | ∞ | ∞ | ∞ | ∞ | ∞ | 1 | 3 | 0 |

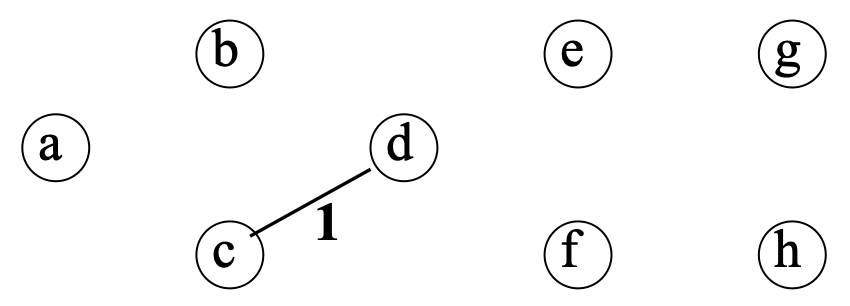
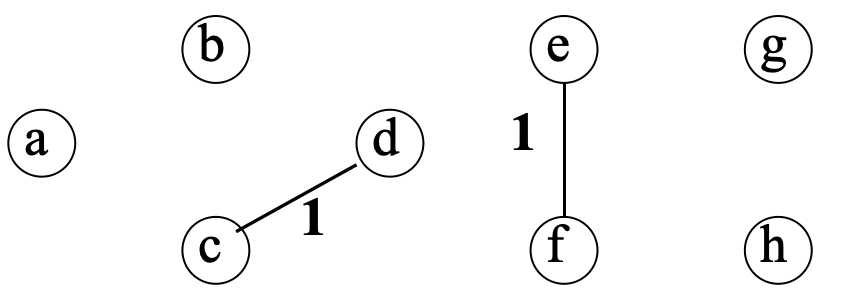
prim算法求最小代价生成树：

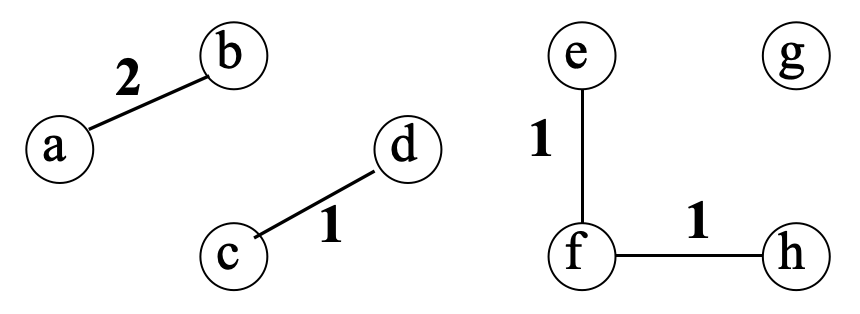
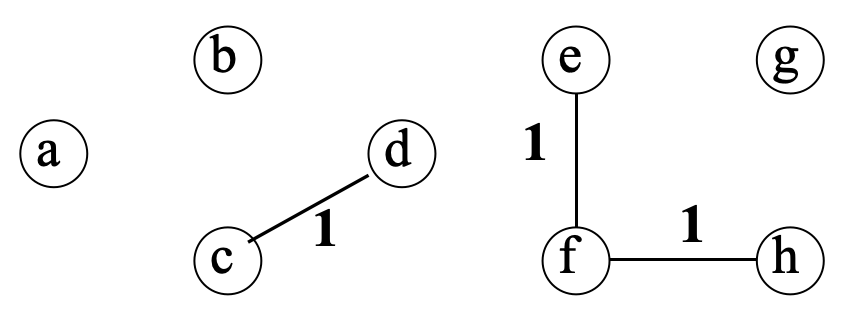


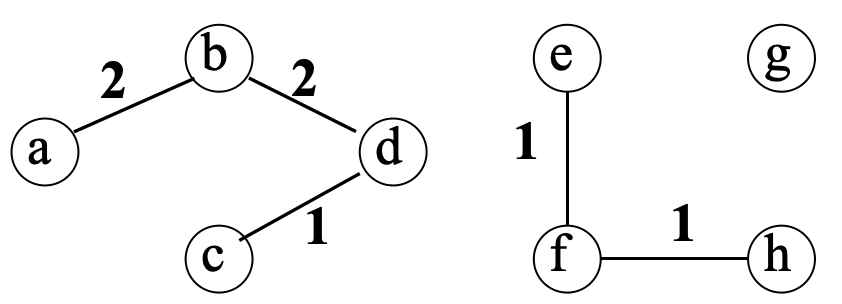
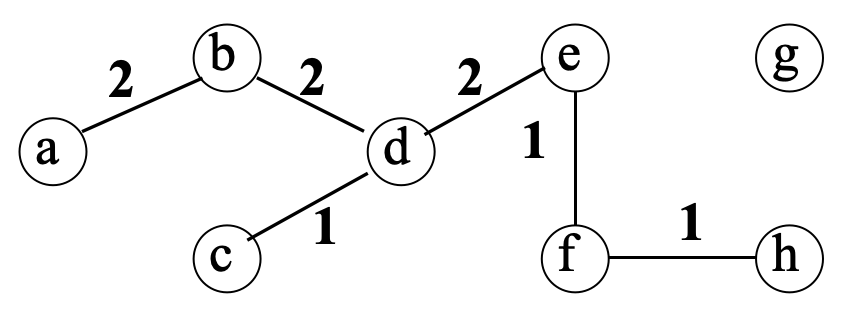
邻接表：

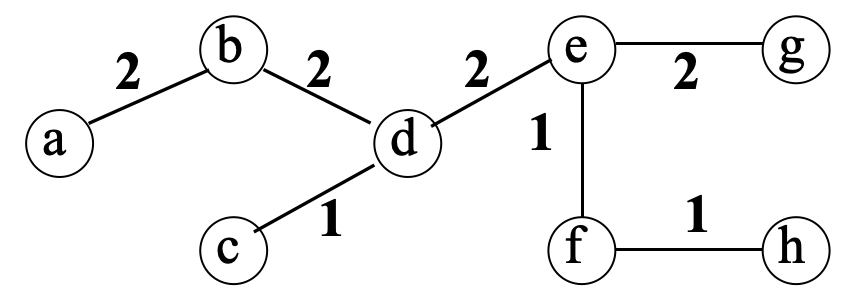


kruskal算法求最小代价生成树：

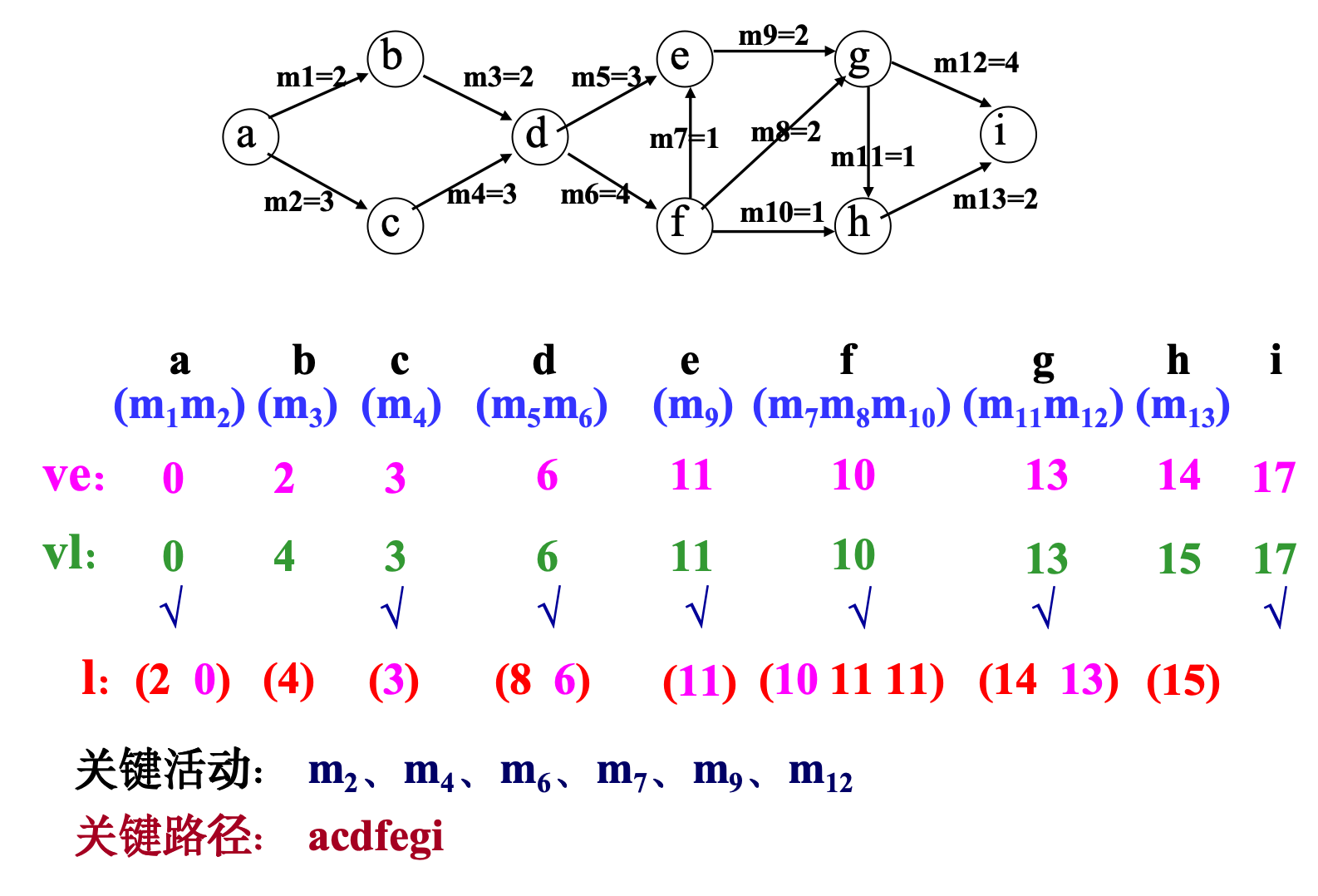
  **

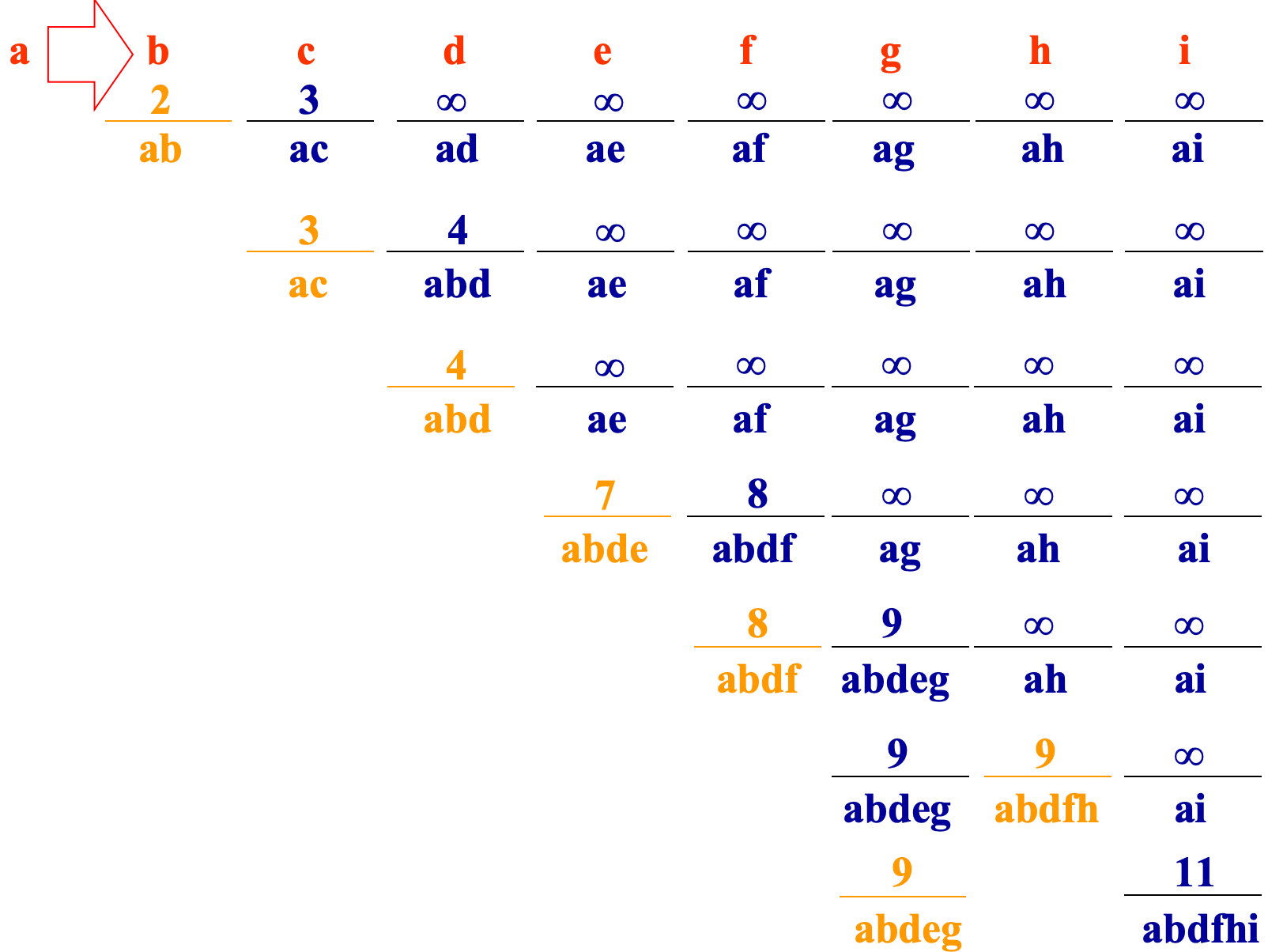


1. **试求出下面有向网的关键路径，并利用迪杰斯特拉算法给出中顶点 a 到其它各点间的最短距离和最短路径，写出执行过程。**

求关键路径：



Dijkstra算法求顶点a到其他各点的最短距离和最短路径：





因此，结果如下：

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 点a到 | b | c | d | e | f | g | h | i |
| 最短距离 | 2 | 3 | 4 | 7 | 8 | 9 | 9 | 11 |
| 最短路径 | ab | ac | abd | abde | abdf | abdfg | abdfh | abdfhi |