Minimum Spanning Tree

The Problem

Construct the minimum spanning tree for a weighted undirected graph.

The Input

The first line of input will be a number on a line by itself which is the number of test cases to run. For each test case, the first line will be two numbers separated by a space *N* and *E*, where *N* (1 <= *N* <= 5000) is the number of nodes in the graph and *E* (1 <= *E* <= 10000) is the number of edges. The graph nodes will be numbered 0 to *N*-1. Each of the next *E* lines contain three numbers *S, D* and *W* each separated by a space representing an edge in the graph from *S* (0 <= *S* < N) to *D* (0 <= *D* < N) with weight *W* (0 < *W* <= 1000).

The Output

For each test case, output the following message on a new line:

Test x, minimum spanning tree weight = y

where x is the test case number and y is the total weight of the edges of the minimum spanning tree. See the example output below.

Sample Input

```
2
5 7
0 1 10
1 3 2
1 4 6
3 4 3
2 4 6
0 4 20
0 2 30
5 6
0 1 8
0 3 2
0 4 5
1 2 6
2 3 4
3 4 3
```

Sample Output

```
Test 1, minimum spanning tree weight = 21
Test 2, minimum spanning tree weight = 15
```