**The given code was compiled in IntelliJ IDEA.**

I have created a graph with 10 nodes and 22 edges.

Then I printed the tree with these nodes. The format of printing is:-

(**Bold** and *italic* lines are the code and others are explanation.)

***The edges are:-***

***Edge from vertex i to vertex j with weight w***

So there is an edge between vertex i and j with a weight w.

***The vertices are {list of vertices}***

***----------------After applying Dijkstra's------------------***

***Distance from vertex i to vertex j is d***

So here the minimum distance from a vertex i(which is the starting point) to a vertex j is d.

***There is an edge between vertex i and vertex j in the tree.***

This is the statement in which I mention the edges(between vertex i and j) in the tree after applying the algorithm.

***The vertices in the tree when we start from {start point} are***

***{list of vertices}***

In this statement I mentioned the list of vertices in the tree like :-

***Vertex i***

And the vertices(**j**) which are not in the tree are mentioned as: -

***Vertex j is not in the tree (Do not have a path from start point to j)***

**NOTE:-** I have used two libraries, namely

*import* java.util.*Comparator*;  
*import* java.util.PriorityQueue;

The second was mentioned in the HW question.

I used the first library for making the comparator for the priority queue and nothing else. Otherwise I would have to implement the heap again.

**To run the code from command line:-**

javac main.java

java main