Name:	Date:
Teacher:	Period:

## **Minimal Spanning Tree**

There is a city that had no roads. Getting around the city is very difficult after rainstorms because the ground became very muddy—cars got stuck in the mud and people got their clothes dirty. The mayor of the city decided that some of the streets must be paved, but wanted to spend the least amount of money possible. The mayor therefore specified two conditions:

- 1. Enough streets must be paved so that it is possible for everyone to travel from their house to anyone else's house only along paved roads, and
- 2. The paving should cost as little as possible.

Here is the layout of the city. The number of paving stones between each house represents the cost of paving that route. Find the best route that connects all the houses, but uses as few counters (paving stones) as possible.



## **Teacher Instructions**

Estimated Time: 20 minutes

Purpose: Helping with the Algorithms standard

Answers: These are the two best solutions

