NAME: _____

2.4 Model real-world phenomena using the formal definitions of graphs and trees.

Say you are setting up a network of servers, where you know the latency time for communications between any directly connected servers.

(a) Suppose we wanted to model this situation using a graph. First, identify what the **nodes** and **edges** of the graph could be.

(b) Should this graph be **directed** or **undirected**? Justify your answer in a sentence or two.

(c) Suppose we made the graph **weighted**. What could the weights of the graph represent?

(d) Now suppose that we ran *Prim's algorithm* to find a **Minimum Spanning Tree** for this graph. Recall that a *Minimum Spanning Tree* is a tree that spans every node in the graph using edges that have a minimum possible weight. What would a minimum spanning tree represent in the graph you have created?

NAME: _____