**Fencing Your Property**

Your parents have decided to fence in the yard so that your dogs can play outside without going into the street. There are two local companies that are able to install the fence within a couple of weeks. You know that both companies will do a quality job, so the decision will come down to price. Your parents have enlisted your help to determine which company will be more affordable.

* Fence Masters quote a price of $12 per foot of fencing.
* Good Neighbor Fencing quotes a price of $250 for the first 100 feet of fencing, and $15 for each additional foot.

The boundary of your yard is determined by five trees. The lines connecting them form the edge of your property. Shown below are the descriptions for the positions of the trees relative to your house.

|  |  |
| --- | --- |
| Tree | Position |
| 1 | 100 feet east |
| 2 | 40 feet east, 80 feet south |
| 3 | 40 feet west, 120 feet south |
| 4 | 90 feet west, 60 feet north |
| 5 | 20 feet east, 110 feet north |

Tip: East/West (x-axis), North/South (y-axis) for plotting points. West and South will results in negative numbers. Use Pythagorean Theorem in order to find the distance between each set of trees.

Determine which company can complete the job for the better price. Provide mathematical evidence to fully justify your choice.