

NAME: _____

HOMEWORK FOR WORKSHEET 3

MATH 1300

DUE February 1, 2008

1. A lighthouse stands 100 yards offshore; on the shore at the spot closest to the lighthouse sits the notorious mermaid rock. Due north of mermaid rock is the exclusive That's-No-Mermaid-It's-A-Whale Motel. The lighthouse light rotates twice a minute. If the beam of light from the lighthouse takes 5 seconds to travel along the shore from mermaid rock to the motel, how far is the motel from the rock?

2. A 15-foot long ladder is leaning against a wall with its base 2 feet from the wall. What can you say about the angle the ladder makes with the floor? (If you cannot calculate the angle at least describe it using mathematical terms.)

3. The bottom of the ladder in problem 2 starts to slide away from the wall at the constant rate of 1 foot per second.

(a) When will the ladder make a 60° angle with the ground?

(b) When will the ladder make a 45° angle with the ground?