1. A post is supported by two wires (one on each side going in opposite directions) creating an angle of 80° between the wires. The ends of the wires are 36 feet apart on the ground. One wire forms an angle of 40° with the ground. How long are the two wires?

2. The Nina, the Pinta, and the Santa Maria are sailing due west on their way to the Americas. Due to a sudden burst of wind, the Pinta is blown off course by 65° (now travelling southwest). After an hour, the Nina and Santa Maria have gone another 240 miles. The Pinta has travelled another 190 miles. How far is the Pinta from the other ships?

3. Bert and Ernie are snorkeling at Turtle Island near St. Thomas in the Virgin Islands. They are floating on the surface of the water 20 meters apart. Bert looks down at an angle of depression of 47° and sees Elmo scuba diving on the bottom. Ernie notices Elmo as well at an angle of depression of 38°. (A) How far is each diver from Elmo? (B) How deep is Elmo?

4. In an effort to determine how wide his pond is, Kermit the Frog starts at one end and walks along the edge for 285 feet. He then turns, forming an angle of 120° to walk along the other bank for 260 feet until he reaches the other end. How wide is the pond?

5. After being blown off course, the Pinta has gone straight for 190 miles. When the captain wakes up and realizes what has happened, he turns right an angle of 80°. After going another 665 miles, he is back on course. How far is the Pinta now (from where it was originally blown off course)?

6. A lighthouse overlooking the Atlantic Ocean is constructed on the edge of the crest of a hill that makes an angle of 30° down to the shore. The sun is shining from the West at an angle of elevation of 70°, casting a 99.5 foot shadow down the hill. How tall is the lighthouse?

GROUP ANSWER SHEET – Show your work in the space provided. Write your answers in the blanks.

1. Wire 1: _____ Wire 2: _____	
2. Distance: _____	
3. A) Bert - _____ Ernie - _____ B) Depth: _____	
4. Width: _____	
5. Distance: _____	
6. Lighthouse:_____	