Fill in the blanks with measures of your choosing and answer the following questions. **DRAW PICTURES** of the scenarios to help you visualize the problem. Show work.

1. A bird sits on top of a street light. The angle of depression from the bird to the feet of the observer, Cammeron, standing away from the street light is \_\_\_\_\_\_\_. The distance from the bird to the Cammeron is \_\_\_\_\_\_\_\_.

(a) How tall is the street light?

2. Connor, standing on the horizontal ground\_\_\_\_\_\_\_\_\_\_\_ from the base of a cliff, noted that the

angle of elevation to the top of the cliff was\_\_\_\_\_\_.

(a) How high was the cliff?

(b) If the angle of elevation is held constant, how will your choice of distance affect the height of

the cliff?

(c) If the distance to the cliff is held constant, how will your choice of angle affect the height of the

cliff?

3. Jessica flies an airplane at a height of \_\_\_\_\_\_\_\_ above the ground. The distance along the ground from the airplane to the airport is \_\_\_\_\_\_\_\_.

(a) What is the angle of depression from Jessica’s airplane to the airport?

(b) If the height of the plane above the ground held constant, how will your choice of distance affect the angle of depression?

(c) If the distance along the ground from the airplane to the airport is held constant, how will your choice of height in the air affect the angle of depression?

4. Suleika the surveyor measured the angle between a path along a riverbank and a line to a fixed

monument on the opposite bank to be \_\_\_\_\_\_\_\_. After walking along the path \_\_\_\_\_\_\_\_\_\_\_, Suleika

again measured and recorded this angle to be \_\_\_\_\_\_\_\_\_\_\_.

(a) At which point was Suleika closer to the monument?

(b) How would you alter your choices so that Suleika would be closer to the monument at the other point?

5. Kelly and Mac are setting up decorations for their school Valentine’s Day dance. Mac is standing 6 feet directly in front of Kelly under a disco ball. If the angle of elevation from Kelly to the ball is 42° and Mac to the ball is 52°, how high is the disco ball?