Worksheet #3 – Applying Trig.
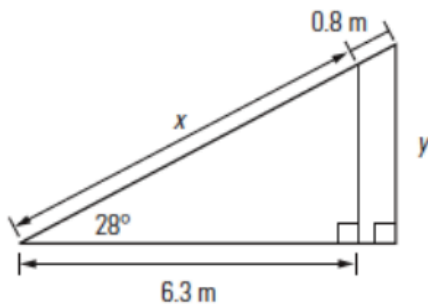
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1. Calculate the measure of angle θ. 11 cm θ 8 cm	2. Solve for the indicated sides and angles. 15° θ y x 21 ft 70.6 ft
3. Find each of the indicated sides. 0.8 m x y 28° 6.3 m	4. Find the angle of offset between the two pipes. How long is the travel pipe? travel pipe 12.6 cm 14.9 cm angle of offset
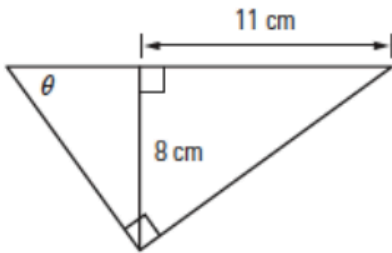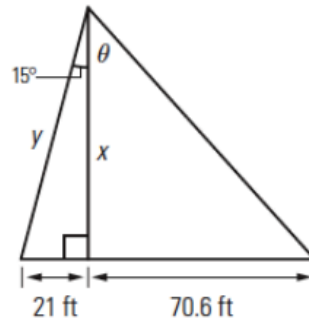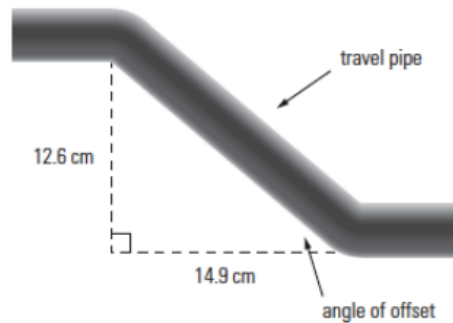
5. A surveyor must determine the distance, AB, across a river. He stands at point C, downriver 500 m from B, and using his theodolite, measures the angle of vision to A as 28°. How wide is the river?

A

28°

C   B

500 m
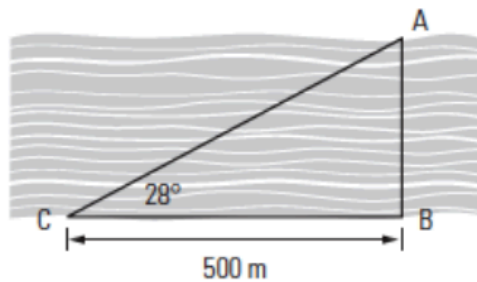
6. Pauline is building a fence around her vegetable garden, shown below. What length of fence will she need to build?

5 m

68.1°   49.4°

1.75 m

2.75 m
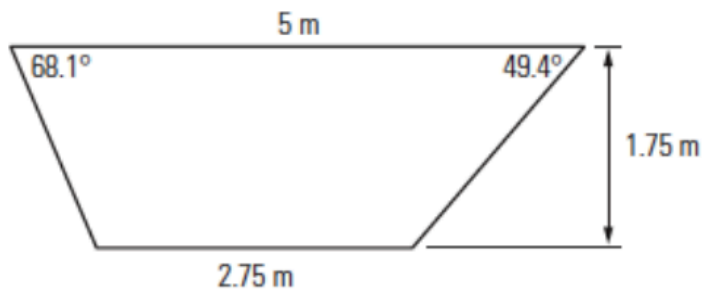
7. Soo-Jin is building a fence around his patio. Using the diagram below, calculate the amount of fencing he will need to buy.

3 m

131.6°

8 m
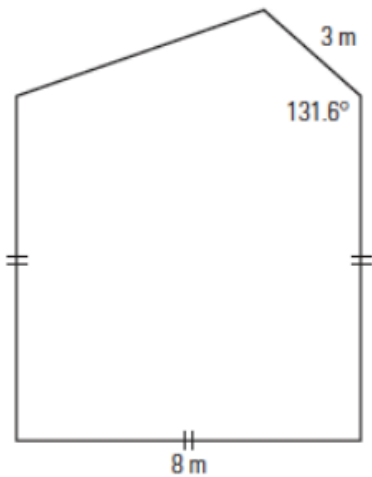
House is here (no fence necessary)

8. From the top of a 200 m-tall office building, the angle of elevation to the top of another building is 40°. The angle of depression to the bottom of the second building is 25°. How tall is the second building?

B_2

40°

25°

B_1 200 m
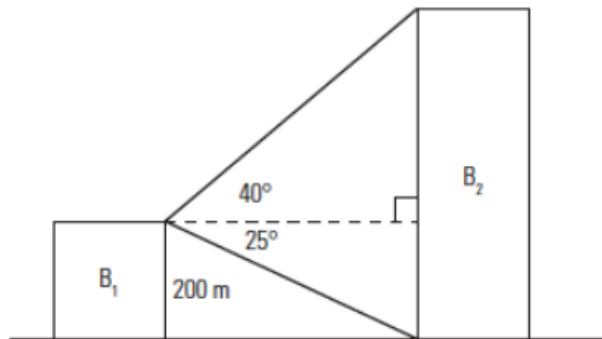
9. A roller coaster has a track that drops at an angle of depression of 25° from a height of 14.9 m. When it reaches the ground, in travels horizontally for 8 m. It then rises at an angle of elevation of 47° to a height of 26.8 m.

25°

14.9 m

26.8 m

47°

8 m
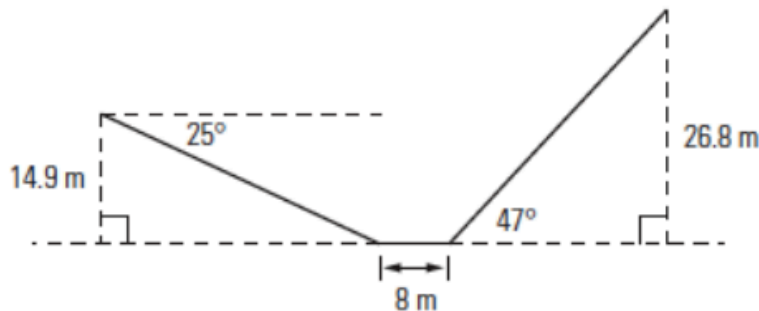
a) What is the total horizontal distance covered by this portion of track?

b) What is the total distance travelled by a car on this portion of the roller coaster track?

10. You're traveling on a road trip and you notice a mountain directly in front of you. The angle of elevation to the peak is 3.5 degrees. After you drive 13 miles closer to the mountain, the angle of elevation is 9 degrees.

- Draw a picture.

- Approximate the height of the mountain. (Hint: You may need to use substitution!)

Challenge: Given that 2 squares of length 15cm are placed next to each other. What is the measure of $\angle EAD$?