

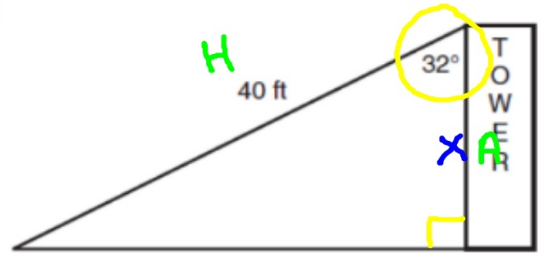
Finding Missing Sides using Trig Ratios:

1. A straight water slide is 40 feet long and starts at the top of a tower. The slide and tower form a 32° angle. How tall is the tower?

$$\cos \theta = \frac{\text{Adj}}{\text{hyp}}$$

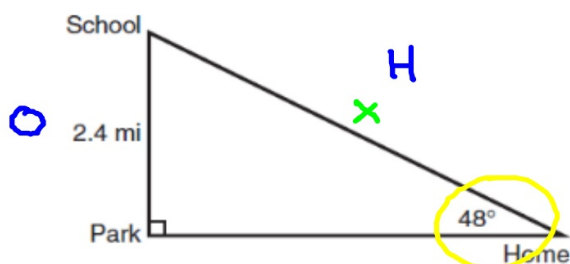
$$\cos 32 = \frac{x}{40}$$

$$x = 40 \cos 32 \\ = 33.92 \text{ ft}$$



Finding Missing Sides using Trig Ratios:

2. Hector's home is directly east of the park. His school is 2.4 miles directly north of the park. The path from Hector's home to the school and the path from his home to the park form a 48° angle, as shown in the figure. How far is Hector's home from his school?



$$\sin \theta = \frac{\text{opp}}{\text{hyp}}$$

$$\sin 48 = \frac{2.4}{x}$$

$$x = \frac{2.4}{\sin 48} \\ = 3.2 \text{ mi}$$