

# Download File PDF Answers To Trigonometry Problems

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#Markus Jensen



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so many fake sites. this is the first one which worked! Many thanks

8) Standing in a light house, 150 feet above the shore, I spot a boat at an angle of depression of 11 degrees. How far away is the boat from shore?

Step 1: Draw a diagram. Step 2: Extract the right triangle. Step 3: Solve.

**SOLUTIONS**

$$\tan(11^\circ) = \frac{150}{d}$$

$$d = \frac{150}{\tan(11^\circ)} \approx \frac{150}{0.194} \approx 772 \text{ feet}$$

check for reasonableness: 772 feet is opposite the 79 degree angle and 150 feet is opposite the 11 degree angle. ✓

9) Looking out from a balcony, the angle of elevation to the top of the next building is approximately 22°. And, the angle of depression to the bottom of the building is approximately 29°. If the building is 200 feet away, how tall is it?

Upper part:  $\tan(22^\circ) = \frac{x}{200}$   $x = 80.8 \text{ feet}$

Lower part:  $\tan(29^\circ) = \frac{y}{200}$   $y = 110.9 \text{ feet}$

**total height: 191.7 feet (approximately)**

10) A hiker approximates an angle of elevation to the top of a hill to be 22 degrees. After walking 700 feet closer, the hiker estimates the angle of elevation increased by 16 degrees. Approximately, how high is the hill?

$$\sin(22^\circ) = \frac{h}{x}$$

$$\sin(22^\circ) = \frac{h}{700 + x}$$

$$(x \sin 22^\circ)^2 = (700 + x)^2 \sin^2 22^\circ$$

$$-79124 = -262,818 + -4040x$$

$$x = 749.58 \text{ (approximately)}$$

Then, find h, using x and trig function:

$$\sin(22^\circ) = \frac{h}{749.58}$$

$$h = 585.6 \text{ (approximately)}$$

$$\sin(22^\circ) = \frac{585.6}{1449.58} \checkmark$$

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