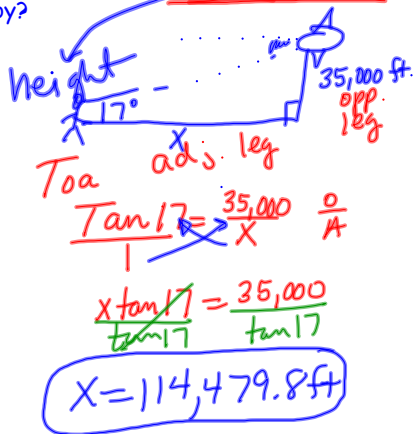
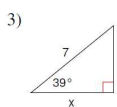
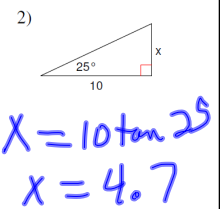
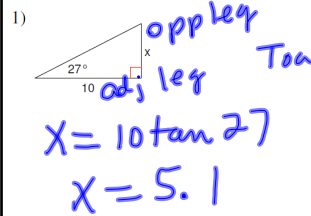


Starter 25 APR 2017

A boy is watching a plane flying in the distance. The pilot spots the boy and measures the angle of depression to the boy to be 17° . If the altitude of the plane is 35,000 ft., what is the ground distance to the boy?

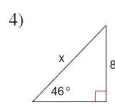


Find the missing side. Round to the nearest tenth.



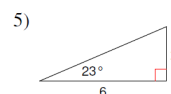
$$x = 7 \cos 39$$

$$x = 5.4$$



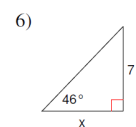
$$x = \frac{8}{\sin 46}$$

$$x = 11.1$$



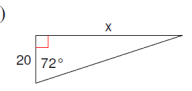
$$x = 6 \tan 23$$

$$x = 2.5$$



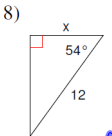
$$x = \frac{7}{\tan 46}$$

$$x = 6.8$$

7) 

$$x = 20 \tan 72$$

$$x = 61.6$$

8) 

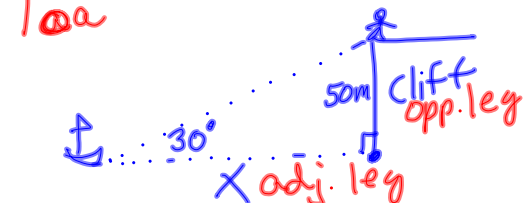
$$x = 12 \cos 54$$

$$x = 7.1$$

1) Make a sketch of each situation.
 2) Solve by using either a SINE, COSINE, or TANGENT ratio.
 3) Round all answers to the NEAREST HUNDRETH.

1. Duke is standing on a cliff that is 50 meters high. He looks down at an angle of 30° and sees a boat on the water. How far away is the boat from the foot of the cliff?

Toa




$\tan 30 = \frac{50}{x}$

$$\frac{x \tan 30}{\tan 30} = \frac{50}{\tan 30}$$

$x = 86.6 \text{ m}$

2. We need to attach a support wire to the top of Parkway West's flagpole, which is 24 feet high. The wire must make a 50° angle with the ground. How long must the wire be?



Soh


$$\frac{\sin 50}{1} = \frac{24}{x}$$

$$\frac{x \sin 50}{\sin 50} = \frac{24}{\sin 50}$$

$x = 31.3 \text{ ft}$

3. A ramp is 7 feet high and 20 feet long on the ground. What is the angle of elevation of the ramp?

Inverse Toa



$\tan X = \frac{7}{20}$

$$X = \tan^{-1}\left(\frac{7}{20}\right) = 19.3^\circ$$

Name: _____ WORKSHEET: Trigonometric Word Problems

Do # 4-6

For each word problem 1 – 6:

- 1) Make a sketch of each situation.
 - 2) Solve by using either a SINE, COSINE, or TANGENT ratio.
 - 3) Round all answers to the NEAREST HUNDRETH.
1. Duke is standing on a cliff that is 50 meters high. He looks down at an angle of 30° and sees a boat on the water. How far away is the boat from the foot of the cliff?
 2. We need to attach a support wire to the top of Parkway West's flagpole, which is 24 feet high. The wire must make a 50° angle with the ground. How long must the wire be?
 3. A ramp is 7 feet high and 20 feet long on the ground. What is the angle of elevation of the ramp?
 4. A jet takes off at a 20° angle from the ground. The jet is traveling 300 ft/s. After 5 seconds, what is the height of the plane?
 5. A park ranger is standing at the top of a 150 foot tower. Looking down at a 15° angle, he sees a forest fire. What is the distance of the fire from the base of the tower?
 6. If Angel is standing 20 meters from the base of a tower, and she is looking up at the top at an angle of 60° , what is the height of the tower?