

Geometry
Trigonometry Practice/Review

Name:
Date:

1. According to a Chinese legend from the Han dynasty (206 B.C.E.-220 C.E). General Han Xin flew a kite over the palace of his enemy to determine the distance between his troops and the palace. If the general let out 800 meters of string and the kite was flying at a 35° angle of elevation, how far away was the palace from General Han Xin's position?



2. Benny is flying a kite directly over his friend, Frank, who is 125 meters away. When he holds the kite string down to the ground, the string makes a 39° angle with the level ground. How high is Benny's kite?

3. The angle of elevation from a ship to the top of a 42-meter lighthouse on the shore measures 33° . How far is the ship from the shore? (Assume the horizontal line of sight meets the bottom of the lighthouse.)



4. A meteorologist, Joey, shines a spotlight vertically onto the bottom of a cloud formation. Another meteorologist, Anthony, is riding in a helicopter 65 meters horizontally from the cloud, places an angle-measuring device onto the spotlight, and measures a 74° angle of depression from the helicopter to Joey's spotlight on the ground. How high are the clouds?



5. Standing at the bottom of the Eiffel Tower, you view the top of the tall structure at an angle of 70° (in relation to the ground). Your friend, also standing on the ground but 50 feet closer to the building, sees the top of the building at an angle of 75° . How tall is the Eiffel Tower (according to this word problem...)?



6. Solve for theta.

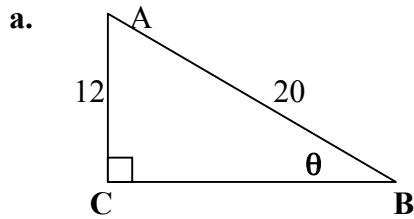
a. $\sin \theta = \frac{1}{2}$

b. $\cos \theta = \frac{3}{5}$

c. $\tan \theta = \frac{3}{6}$

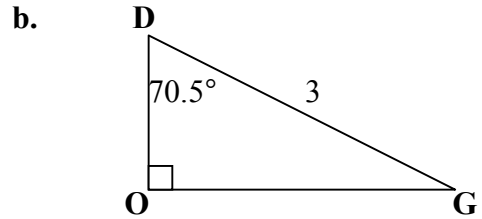
d. $8 \cos \theta - 1 = 0$

7. Find all the missing parts of the triangles below.



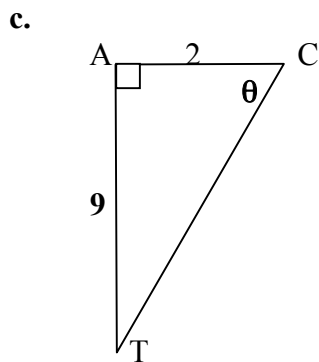
$\theta =$

$CB =$



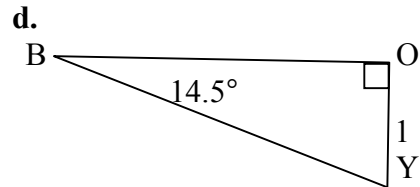
$DO =$

$OG =$



$\theta =$

$CT =$



$BO =$

$BY =$

8. a. If $\theta = 60^\circ$, find the point $(190, y)$, on the terminal side of a right triangle in standard position.

b. If $\theta = 45^\circ$, find the point $(x, 755)$, on the terminal side of a right triangle in standard position.

ANSWERS

1. 655.32 m

2. 101.22 m

3. 64.67 m

4. 226.68 m

5. 520.48 ft

6. a. 30

b. 53.13

c. 26.57

d. 82.82

7. a. $\theta = 36.87$, $CB = 16$

b. $DO = 1$, $OG = 2.8$

c. $\theta = 77.47$, $CT = 9.22$

d. $BO = 3.87$, $BY = 4$

8. a. $y = 329$

b. $x = 755$