

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**RIGHT TRIANGLE TRIG**

1) a) Find the 3 trig ratios from Angle A and Angle B.

sin A:

sin B:

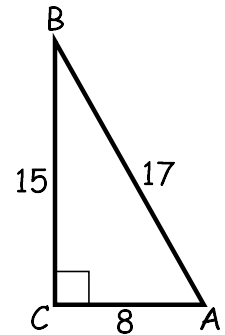
cos A:

cos B:

tan A:

tan B:

therefore the  $\sin A = \frac{\text{opposite}}{\text{hypotenuse}}$  &  $\cos A = \frac{\text{adjacent}}{\text{hypotenuse}}$



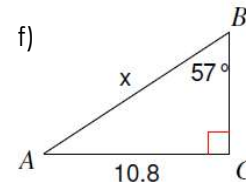
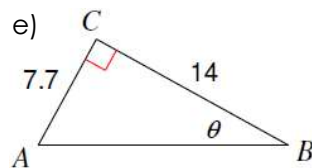
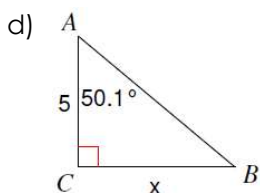
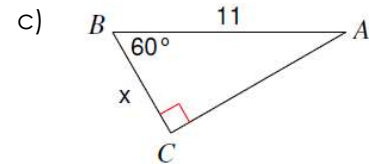
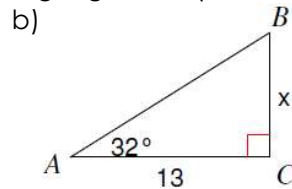
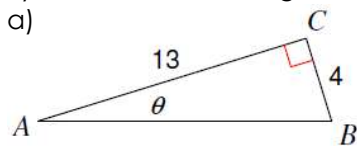
2) Draw  $\triangle CAT$  where  $\angle ATC = 90^\circ$ ,  $CA = 53$ , and  $CT = 28$ .

- a) What is the length of AT?
- b) What is  $\sin C$ ?
- c) What is  $\tan A$ ?

3) Draw  $\triangle ABC$  where  $\angle B = 90^\circ$  and  $\sin A = \frac{16}{20}$ .

- a) What is the length of AB?
- b) What is  $\tan A$ ?
- c) What is  $\cos A$ ?

4) Solve for the missing side or angle using Trig Ratios (sin, cos, tan).

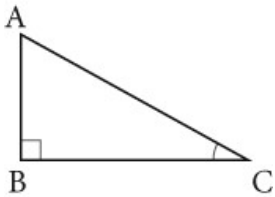


5) An 8 foot ladder is leaning against a wall so that the base is 5 feet from the base of the wall. What angle does the ladder make with the ground? Round to the nearest tenth.

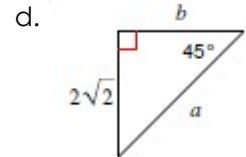
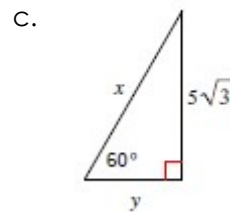
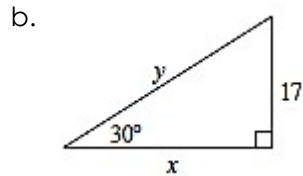
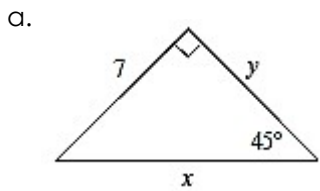
6) A surveyor is standing 25 feet from a building and is looking at the top with an angle of elevation of  $65^\circ$ . How tall is the building? Round to the nearest tenth.

7) A kite is being flown using 150 yards of string. The kite has an angle of elevation with the ground of  $65^\circ$ . How high above the ground is the kite?

8) In the triangle,  $BC = 12$  cm and  $\tan C = \frac{3}{4}$ . What is the measure in degrees of angle C? What is the length of the hypotenuse?



9. Find all missing sides using trig ratios:



More Complements:

10. Given  $\sin \theta = \frac{20}{29}$ .

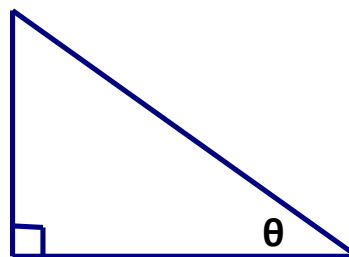
$\cos \theta =$  \_\_\_\_\_

$\sin (90 - \theta) =$  \_\_\_\_\_

$\cos (90 - \theta) =$  \_\_\_\_\_

11. Given the following trigonometric values, label ALL of the triangle's sides.

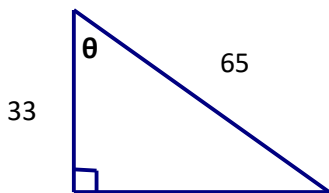
$\tan \theta = \frac{48}{55}$



Missing side length = \_\_\_\_\_

$\cos \theta =$  \_\_\_\_\_  $\sin(90 - \theta) =$  \_\_\_\_\_  $\cos(90 - \theta) =$  \_\_\_\_\_  $\sin \theta =$  \_\_\_\_\_

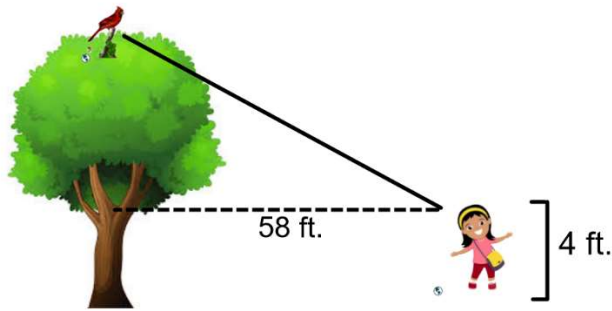
12. Given the triangle below, find the length missing side. Then answer the questions about the triangle.



Missing side length = \_\_\_\_\_

$\sin \theta =$  \_\_\_\_\_  $\cos \theta =$  \_\_\_\_\_  $\sin(90 - \theta) =$  \_\_\_\_\_  $\cos(90 - \theta) =$  \_\_\_\_\_

13.

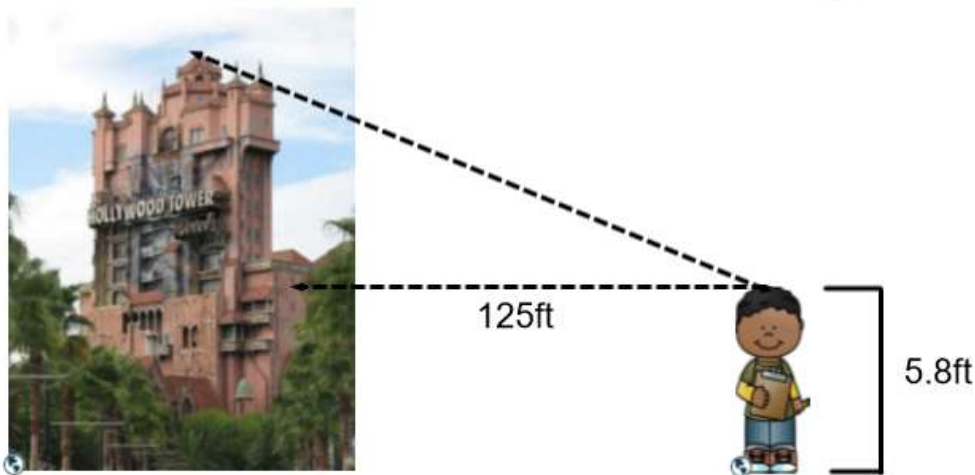


Carmen is a 4 foot tall young girl who is standing 58 ft. away from a tree. She is looking up at a cardinal, who has flown to the very top of the tree, with a 38 degree angle of elevation. Carmen is wondering how tall is the tree in case she decides to climb after it?

14. Mary Popins Friend, Bert (the chimney sweep) was lighting the street lamps one night. If he were to lean his 12 foot ladder on the street lamp with a 48 degree angle with the ground, how high will he reach on the street lamp?



15.



Harry is 5.8 ft. tall. He is looking up at the Tower of Terror at a 56 degree angle of elevation. Harry is wondering how tall is the Tower of Terror. If he can get a good enough estimate, his teacher said he could ride the ride!