

Target 1: Solve problems using the Pythagorean Theorem

Directions: Determine if the lengths represent a triangle. If so, determine if the triangle is acute, right, or obtuse.

1) 8, 6, 10

2) 15, 12, 11

3) 3, 19, 12

Triangle? (Circle one): YES NO

Triangle? (Circle one): YES NO

Triangle? (Circle one): YES NO

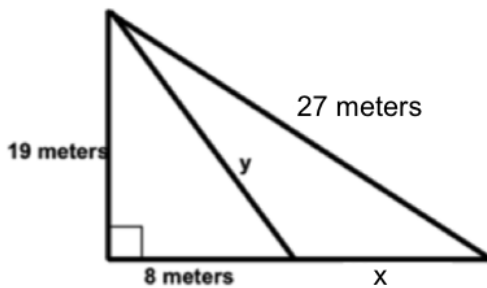
TYPE: _____

TYPE: _____

TYPE: _____

Directions: Find the values of x and y . Round to the nearest whole number. Then find their sum.

4)

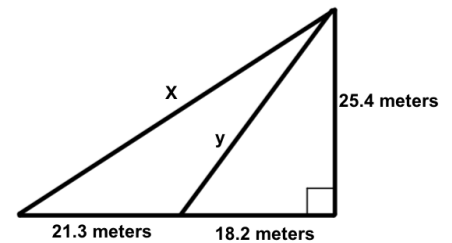


$x =$ _____

$y =$ _____

Sum = _____

5)



$x =$ _____

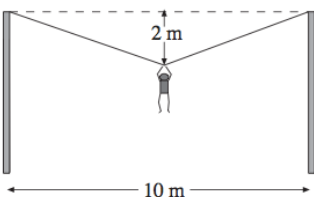
$y =$ _____

Sum = _____

6) If a triangle has one side with a length of 12 and a second side with length of $2\sqrt{85}$, what are all the possible lengths of the third side? Use approximate values rounded to three decimal places.

7) If a right triangle has a leg of length 11 and a hypotenuse of 15, what is the length of the other leg? Write your answer in simplified radical form if necessary.

8) A rope is fixed between two poles. If Nicandy hangs on the middle of the rope, it sags 2 meters down. Find the length of the stretched rope from Nicandy to the pole.



Answer: _____

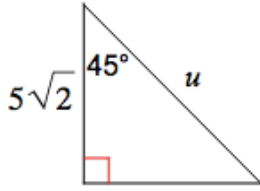
9) A ladder 8 feet long is leaning against the house. If the ladder reaches 6 feet up the house, how far is the base of the ladder from the base of the house?

Answer: _____

Target 2: Solve problems using similar right triangles

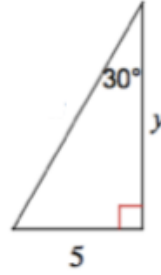
Directions: Find the exact value of the indicated variable.

10)



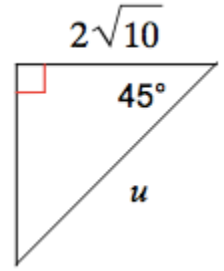
$u = \underline{\hspace{2cm}}$

11)



$y = \underline{\hspace{2cm}}$

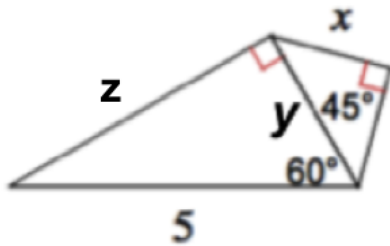
12)



$u = \underline{\hspace{2cm}}$

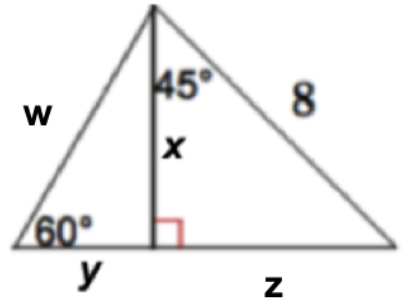
Directions: Find the values of the indicated variables. Then find their sum. Round all answers to 3 decimal places.

13)



$x = \underline{\hspace{1cm}} \quad y = \underline{\hspace{1cm}} \quad z = \underline{\hspace{1cm}} \quad \text{sum} = \underline{\hspace{2cm}}$

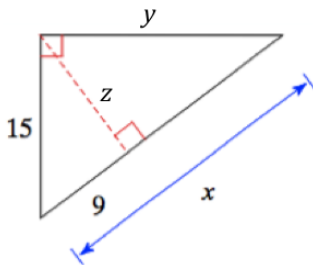
14)



$w = \underline{\hspace{1cm}} \quad x = \underline{\hspace{1cm}} \quad y = \underline{\hspace{1cm}} \quad z = \underline{\hspace{1cm}} \quad \text{sum} = \underline{\hspace{2cm}}$

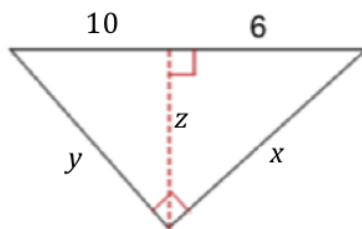
Directions: Find the value of x , y , and z , and then find the indicated measurement. Round all answers to 3 decimal places.

15)



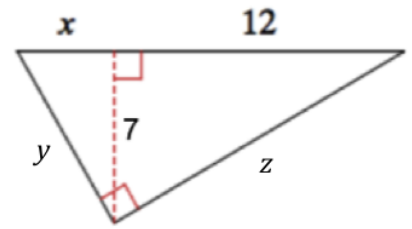
$x = \underline{\hspace{2cm}}$
 $y = \underline{\hspace{2cm}}$
 $z = \underline{\hspace{2cm}}$
 Area = $\underline{\hspace{2cm}}$

16)



$x = \underline{\hspace{2cm}}$
 $y = \underline{\hspace{2cm}}$
 $z = \underline{\hspace{2cm}}$
 Area = $\underline{\hspace{2cm}}$

17)

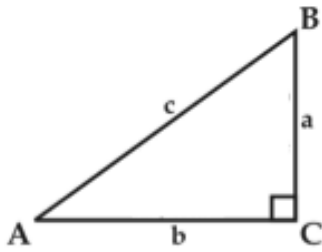


$x = \underline{\hspace{2cm}}$
 $y = \underline{\hspace{2cm}}$
 $z = \underline{\hspace{2cm}}$
 Perimeter = $\underline{\hspace{2cm}}$

Target 3: Apply trigonometric ratios to find unknown sides and angles

Directions: Find the indicated trigonometric value.

18)



a) $\sin A =$

b) $\cos A =$

c) $\tan A =$

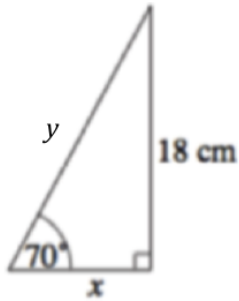
d) $\sin B =$

e) $\cos B =$

f) $\tan B =$

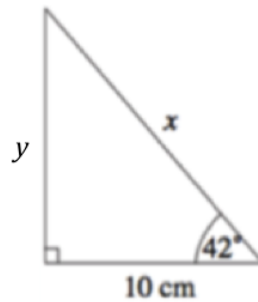
Directions: Find the value of the indicated variables, and then select their sum. Round to three decimal places.

19)



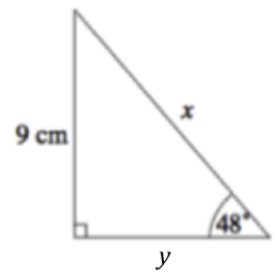
$x =$ _____ $y =$ _____ Sum = _____

20)



$x =$ _____ $y =$ _____ Sum = _____

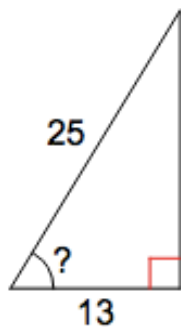
21)



$x =$ _____ $y =$ _____ Sum = _____

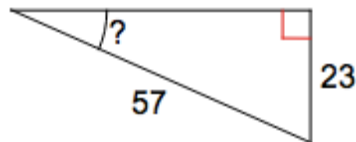
Directions: Find the measure of the indicated angle. Round to the nearest angle.

22)



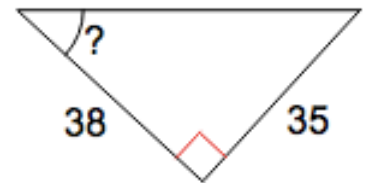
? = _____

23)



? = _____

24)



? = _____

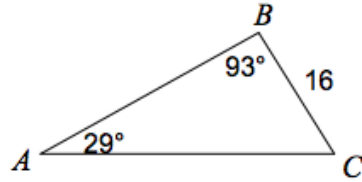
25) Neil's kite has a 350 ft string. Neil measures the angle of elevation to be 47.5° . How far would Neil have to walk to be directly under the kite?

26) Stephanie is walking down the side of a hill that is 2.82 miles high. The trail that she is walking down that leads from the top to the bottom of the hill is about 4.32 miles long. What is Stephanie's angle of descent?

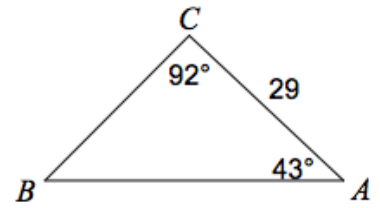
Target 4: Understand, use, and apply the law of sines and cosines

Directions: Find all the missing sides and angles.

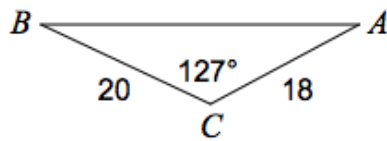
27)



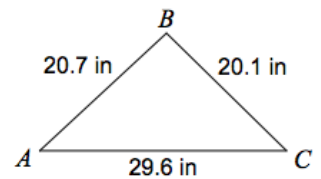
28)



29)



30)



31) Mike and Andy are standing on the same side of a riverbank. There is a house on the other side of the river in between the two of them. Andy can see the house at an angle of 40° and is 130 meters away from it. Mike can see the house at an angle of 60° . How far apart are Mike and Andy from each other

32) Farmer John is making a triangular garden with three pieces of fence that are 17 yd, 18 yd, and 25 yd long. What are the angles formed at each corner of the garden?