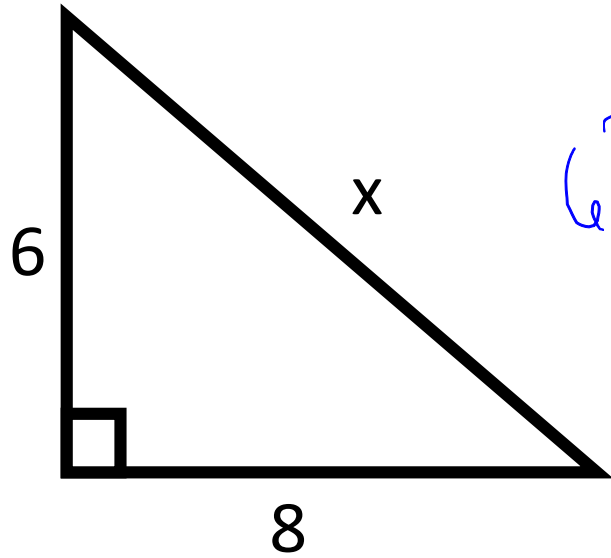
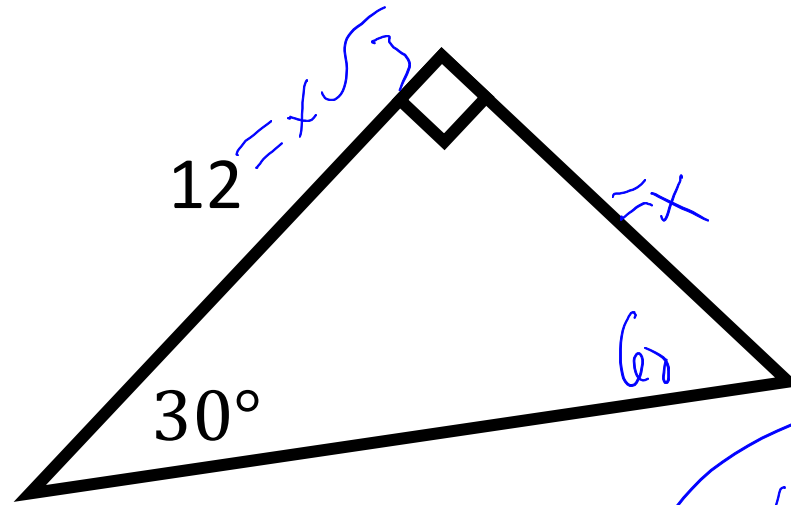


# Warm Up

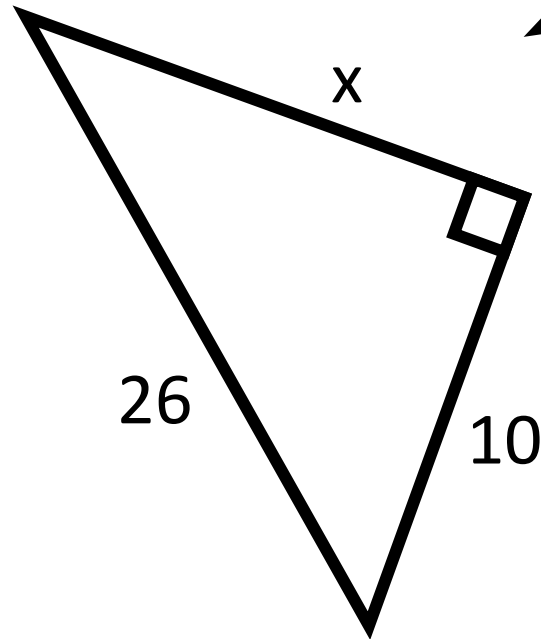
Solve for each missing side length.



$$6^2 + 8^2 = x^2$$
$$x = 10$$



$$x = 6.9$$



$$10^2 + x^2 = 26^2$$
$$100 + x^2 = 676$$
$$x^2 = 576$$
$$x = 24$$

# Homework

1.  $a = 4, b = 2\sqrt{2}$

2.  $x = y = 2\sqrt{2}$

3.  $y = \frac{3\sqrt{2}}{2}, x = 3$

4.  $y = 3\sqrt{2}, x = 6$

5.  $x = y = 3\sqrt{2}$

6.  $x = y = 2\sqrt{3}$

7.  $y = 8, x = 8\sqrt{3}$

8.  $v = 2\sqrt{3}, u = 4$

# Homework

1.  $a = 4, b = 2.83$

2.  $x = y = 2.83$

3.  $y = 2.12, x = 3$

4.  $y = 4.24, x = 6$

5.  $x = y = 4.24$

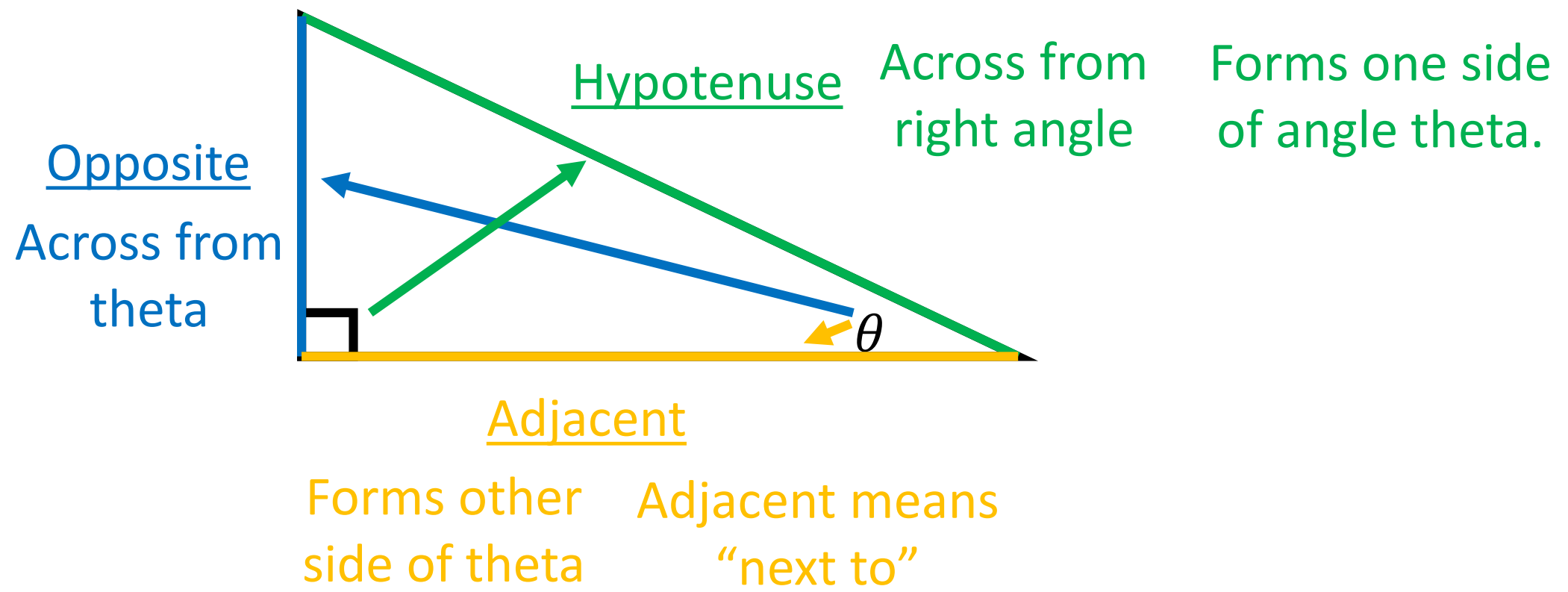
6.  $x = y = 3.46$

7.  $y = 8, x = 13.86$

8.  $v = 3.46, u = 4$

# Notes

Theta ( $\theta$ ) represents an unknown angle.



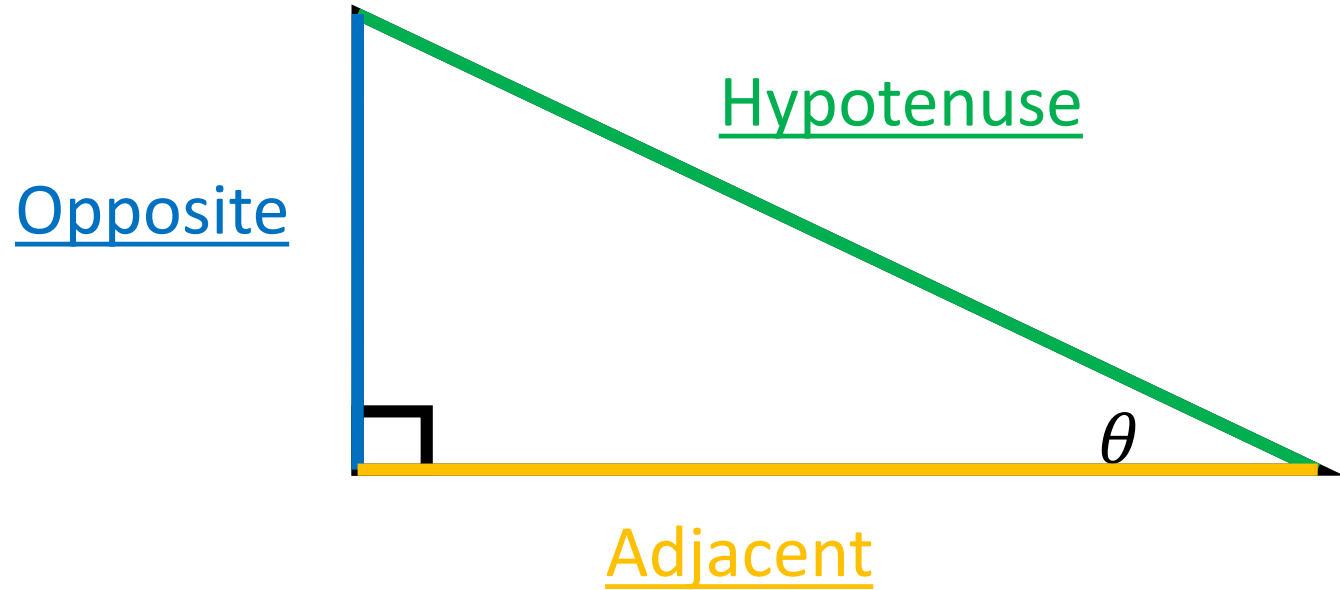
# Notes

Right triangle trig:

Sine:  $\sin(\theta) = \frac{\textit{opposite}}{\textit{hypotenuse}}$

Cosine:  $\cos(\theta) = \frac{\textit{adjacent}}{\textit{hypotenuse}}$

Tangent:  $\tan(\theta) = \frac{\textit{opposite}}{\textit{adjacent}}$



We can easily remember these with the acronym SOH CAH TOA.

# Activity

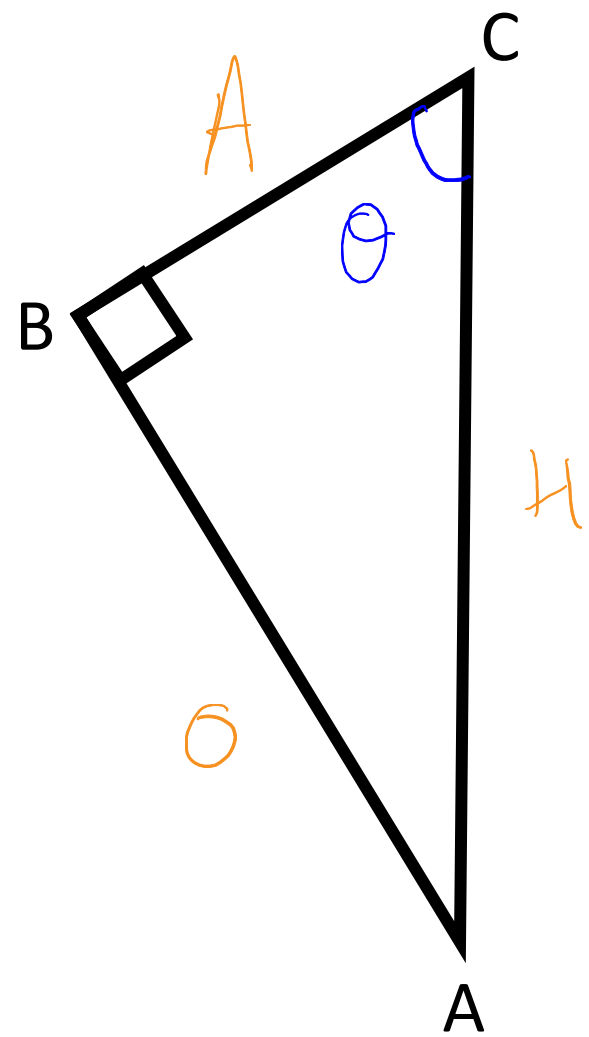
$$S = \frac{O}{H}$$

$$C = \frac{A}{H}$$

$$T = \frac{O}{A}$$

# Notes

In this triangle, which side is opposite, adjacent, and hypotenuse based on angle C?



Opposite =  $\overline{AB}$

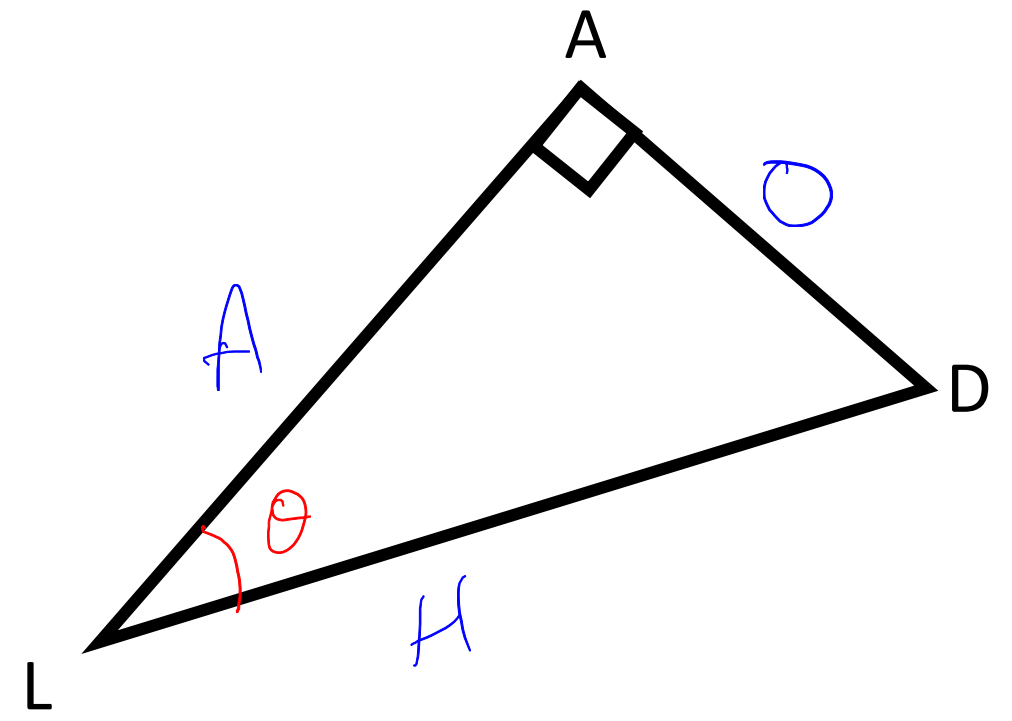
Adjacent =  $\overline{BC}$

Hypotenuse =  $\overline{AC}$

# Notes

In this triangle, which side is opposite, adjacent, and hypotenuse based on angle L?

Opposite =  $\overline{AD}$   
Adjacent =  $\overline{AL}$   
Hypotenuse =  $\overline{LD}$





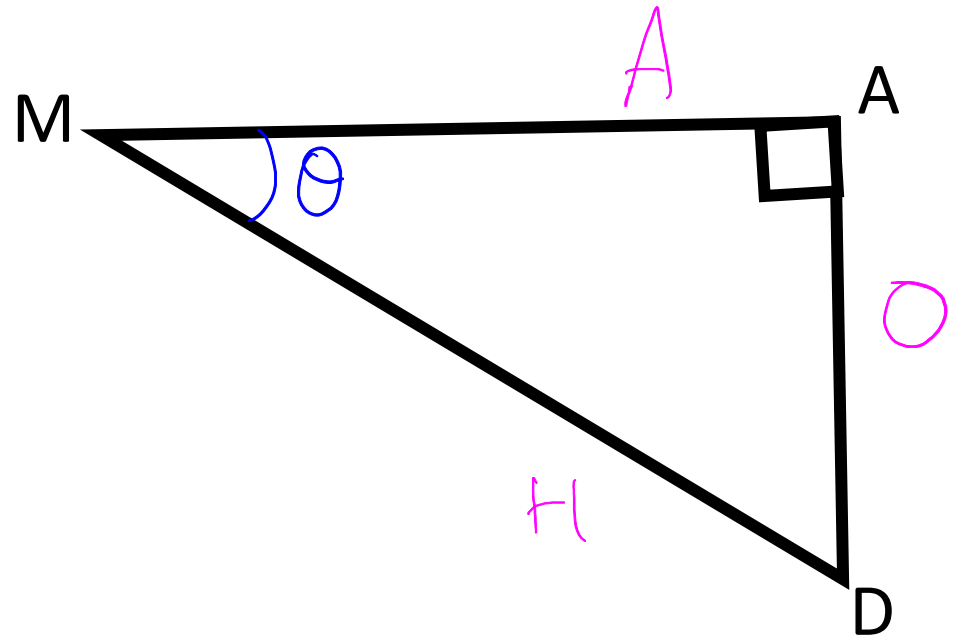
Notes – You try!

In this triangle, which side is opposite, adjacent, and hypotenuse based on angle M?

Opposite =  $\overline{AD}$

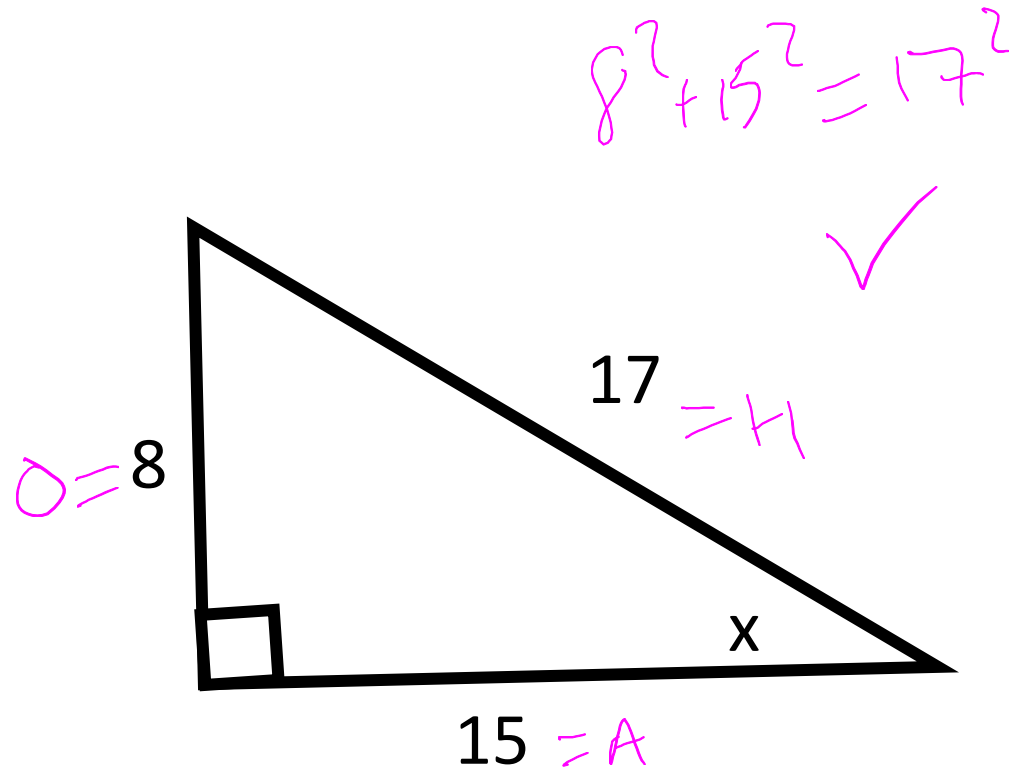
Adjacent =  $\overline{AM}$

Hypotenuse =  $\overline{MD}$



# Notes

Is this a right triangle? Trig functions only work on right triangles!!



Find  
 $\tan(x) = \frac{8}{15}$

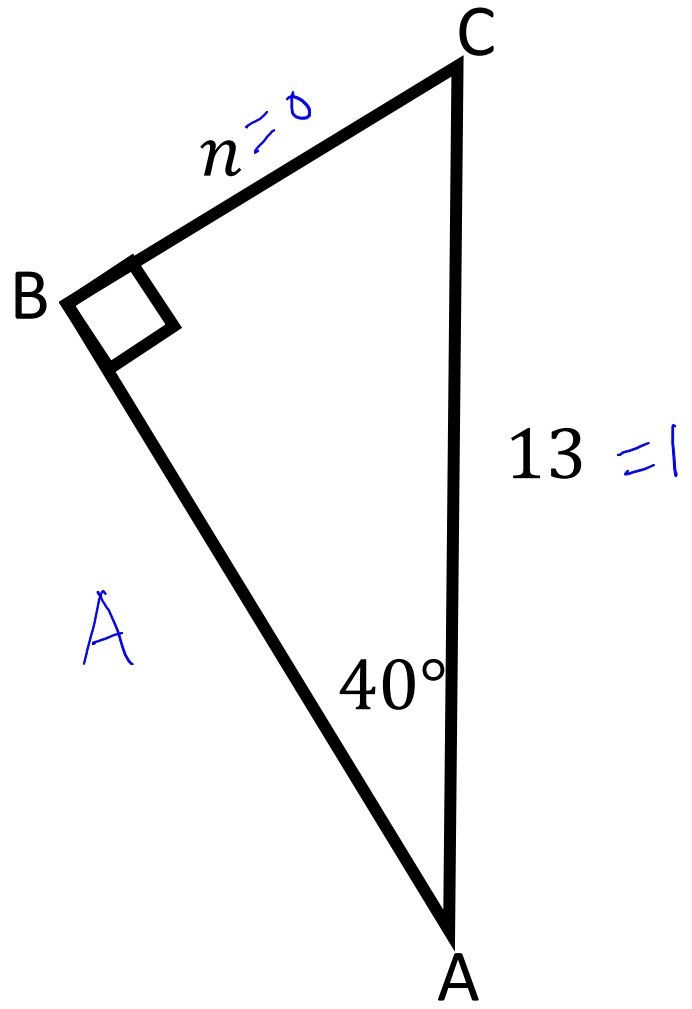
$$\sin(x) = \frac{8}{17}$$

$$\cos(x) = \frac{15}{17}$$

Notes

Label each leg opposite, adjacent or hypotenuse.

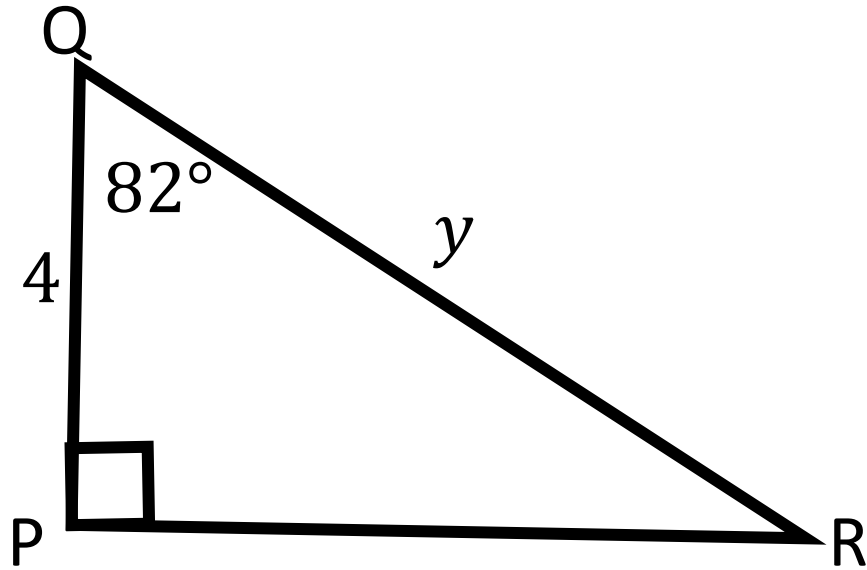
Write the formula for  $n$  and solve to the nearest tenth.



Notes

Label each leg opposite, adjacent or hypotenuse.

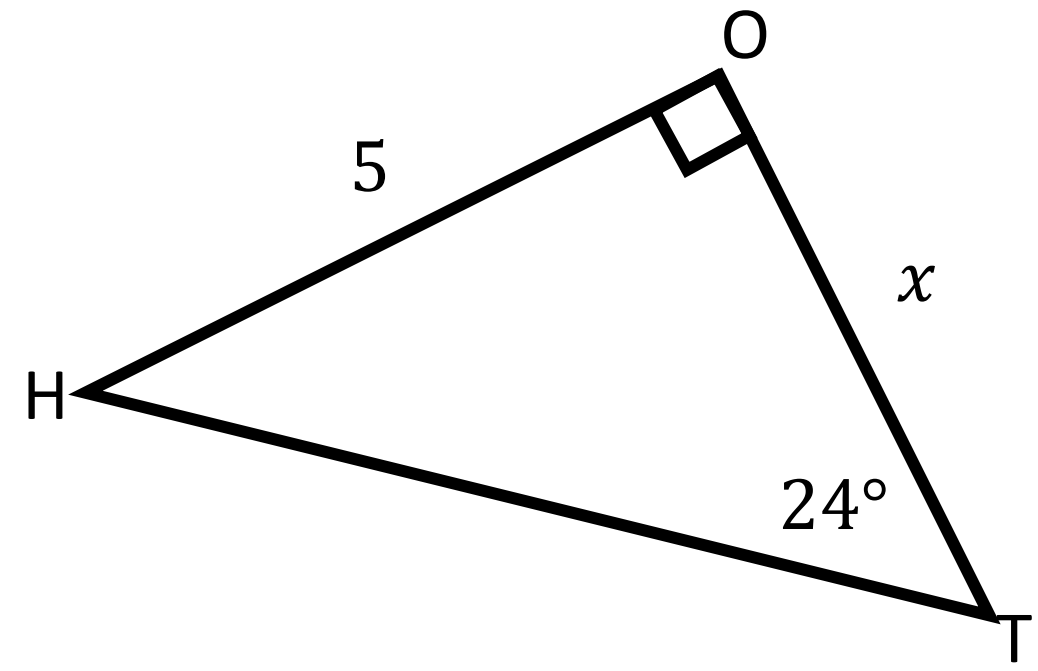
Write the formula for  $y$  and solve to the nearest tenth.



Notes

Label each leg opposite, adjacent or hypotenuse.

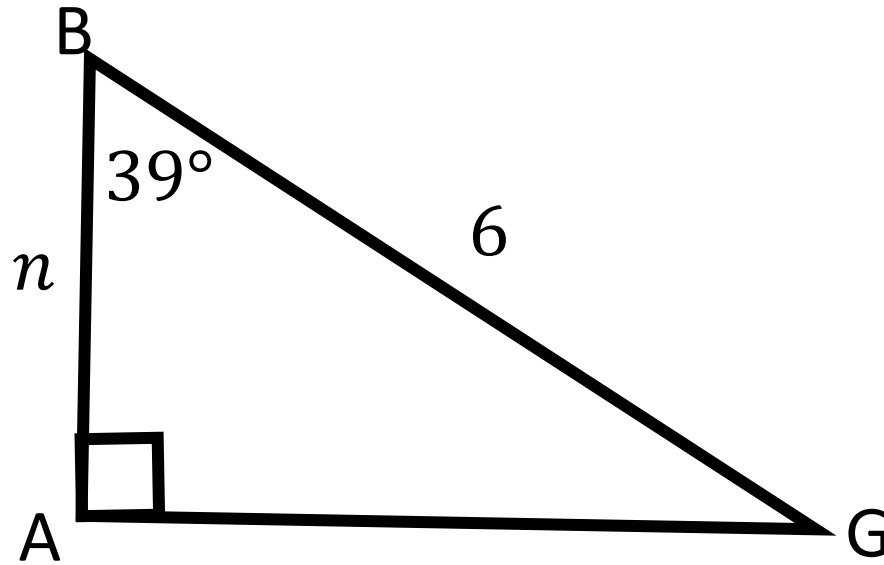
Write the formula for  $x$  and solve to the nearest tenth.



Notes – You try!

Label each leg opposite, adjacent or hypotenuse.

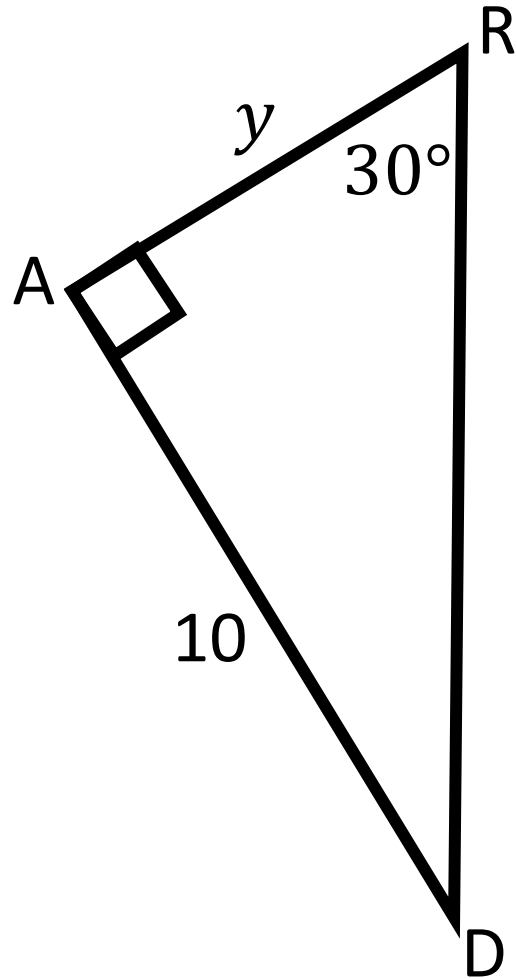
Write the formula for  $n$  and solve to the nearest tenth.



Notes – You try!

Label each leg opposite, adjacent or hypotenuse.

Write the formula for  $y$  and solve to the nearest tenth.



Notes – You try!

Label each leg opposite, adjacent or hypotenuse.

Write the formula for  $x$  and solve to the nearest tenth.

