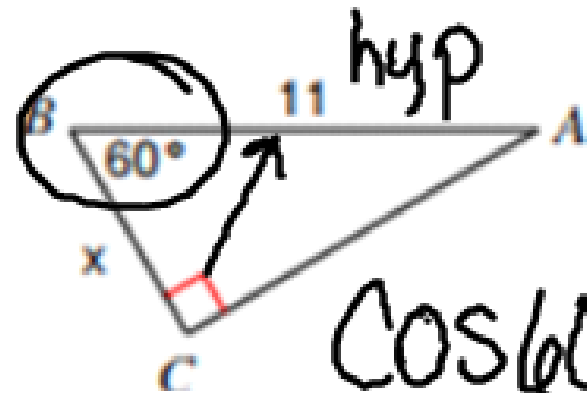


$$\cos 37 = \frac{11}{x}$$

$$x = \frac{11}{\cos 37}$$

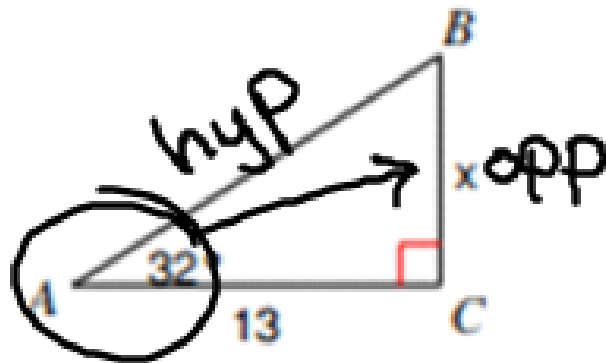
$$x = 13.77$$



$$\cos 60 = \frac{x}{11}$$

$$11 \cos 60 = x$$

$$x = 5.5$$

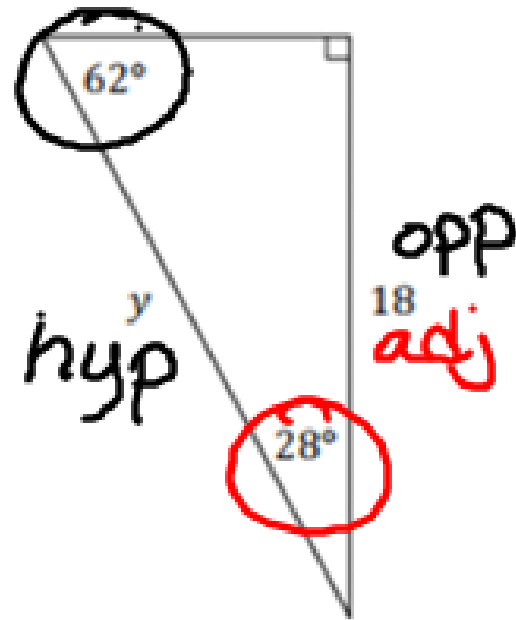


$$\tan 32 = \frac{x}{13}$$

$$13 \tan 32 = x$$

$$8.12$$

Consider the figure below.



$$\cos 28 = \frac{18}{y}$$

$$\sin 62 = \frac{18}{y}$$

$$y = \frac{18}{\sin 62}$$

Determine the value of y .

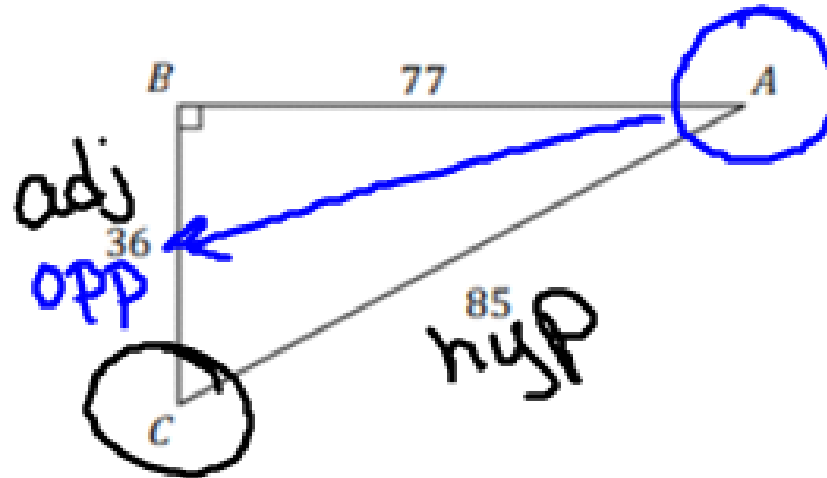
$$y = 20.39$$

Given the lengths of sides, we can use "trig" functions to find missing angles by using their inverses:

\sin^{-1} , \cos^{-1} , \tan^{-1}

Let's Practice!

1. Consider the triangle below.



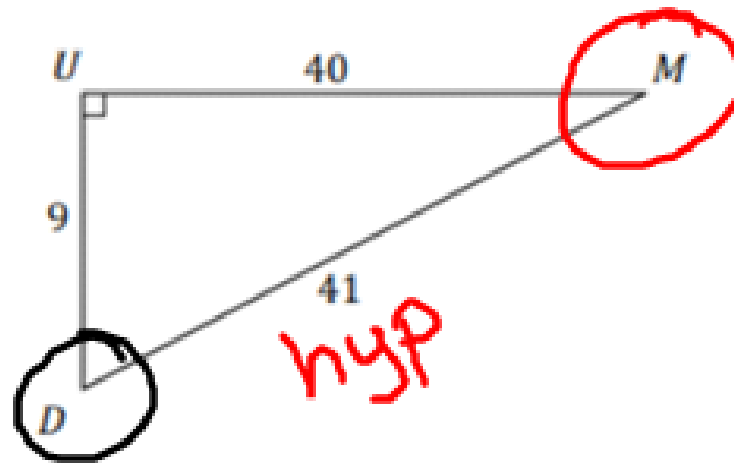
Find $\cos C$, $\sin A$, $m\angle A$ and $m\angle C$ for the triangle.

$$\cos C = \frac{36}{85} = 0.4235$$

$$\sin A = \frac{36}{85} = 0.4235$$

$$m\angle A = 25.1$$
$$m\angle C = 64.9$$

2. Consider the triangle below.



Find $\tan M$, $\cos D$, $m\angle D$ and $\sin M$ for the triangle.

$$\begin{aligned}\tan M &= \frac{9}{40} \\ &= .2250\end{aligned}$$

$$\begin{aligned}\cos D &= \frac{9}{41} \\ &= .2195\end{aligned}$$

$$\begin{aligned}\sin M &= \frac{9}{41} \\ &= .2195\end{aligned}$$

$$m\angle D = 77.3^\circ$$