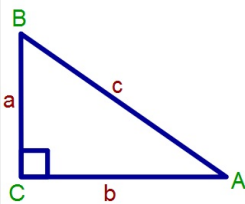


October 24

SWBAT:

Solve Application Problems with trig functions

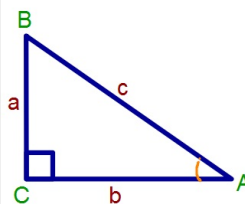


$a = 10$, $b = 14$
Find side c ,
Angle A and Angle B

$$\begin{aligned}10^2 + 14^2 &= c^2 \\100 + 196 &= c^2 \\296 &= c^2 \\\sqrt{296} &= c \\17.204 &= c\end{aligned}$$

$$\begin{aligned}\tan A &= \frac{a}{b} & \sin A &= \frac{a}{c} & \cos A &= \frac{b}{c} \\ \tan A &= \frac{10}{14} & \sin A &= \frac{10}{\sqrt{296}} & \cos A &= \frac{14}{\sqrt{296}} \\ A &= \tan^{-1}\left(\frac{10}{14}\right) & A &= \sin^{-1}\left(\frac{10}{\sqrt{296}}\right) & A &= \cos^{-1}\left(\frac{14}{\sqrt{296}}\right) \\ A &= 35.538^\circ & A &= 35.538 & A &= 35.538\end{aligned}$$

$$\begin{aligned}B &= 90 - A \\ 90 - 35.538 \\ A &= 54.462^\circ\end{aligned}$$



$A = 54^\circ$, $c = 15$
Find side a , side b ,
and Angle B

$$\begin{aligned}\sin(54) &= \frac{a}{15} \\ 15 \cdot \sin(54) &= a \\ 12.135 &= a\end{aligned}$$

$$\begin{aligned}\cos(54) &= \frac{b}{15} \\ 15 \cdot \cos(54) &= b \\ 8.816 &= b \\ 8.817\end{aligned}$$

$$\begin{aligned}B &= 90 - A \\ 90 - 54 \\ B &= 36^\circ\end{aligned}$$