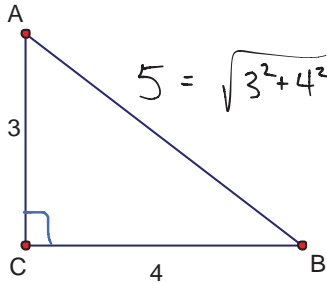


Given the lengths of two sides of a right triangle, find the length of the other side and the measure of the acute angles. (round)



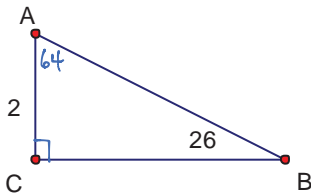
$$\tan A = \frac{4}{3} \Rightarrow A = \tan^{-1}\left(\frac{4}{3}\right) \approx 53.13^\circ$$

$$\text{or } \sin A = \frac{4}{5} \Rightarrow A = \sin^{-1}\left(\frac{4}{5}\right) \approx 53.13^\circ$$

$$\text{or } \cos A = \frac{3}{5} \Rightarrow A = \cos^{-1}\left(\frac{3}{5}\right) \approx 53.13^\circ$$

$$B = 90 - A = 36.87^\circ$$

Given one side and one angle, find the other sides and the measure of the other acute angle.



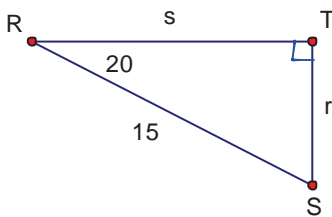
$$\frac{2}{BC} = \frac{\tan 26}{1}$$

$$BC = \frac{2}{\tan 26} \approx 4.10$$

$$BC \tan 26 = 2 \cdot 1$$

$$AB = \sqrt{2^2 + BC^2} \approx 4.56$$

Solve the right triangle. Round decimals to the nearest tenth.



$$\sin 20^\circ = \frac{r}{15}$$

$$r = 15 \sin 20 \approx 5.13$$

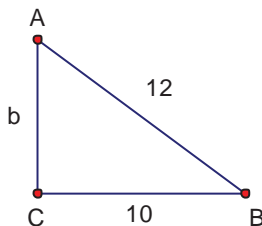
$$\frac{s}{15} = \cos 20 \quad \text{or}$$

$$s^2 + r^2 = 15^2$$

$$s = 15 \cos 20 \approx 14.1$$

$$s = \sqrt{15^2 - r^2} \approx 14.1$$

Solve the right triangle. Round decimals to the nearest tenth.

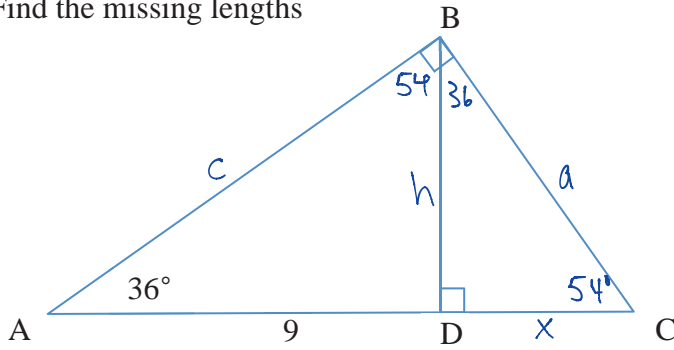


$$\cos B = \frac{10}{12} = \frac{5}{6}$$

$$m\angle B = \cos^{-1}\left(\frac{5}{6}\right) \approx 33.6^\circ$$

$$m\angle A = 90 - m\angle B \approx 56.4^\circ$$

Find the missing lengths



$$h^2 = 9x \leftarrow \text{using geometric means}$$

$$x = \frac{h^2}{9} \approx 4.8$$

or

$$\tan 54 = \frac{h}{x}$$

$$x = \frac{h}{\tan 54} \approx 4.8$$

$$\frac{h}{9} = \tan 36$$

$$c = \sqrt{9^2 + h^2} \approx 6.2$$

$$h = 9 \tan 36 \approx 6.5$$

$$\sin 54 = \frac{h}{a}$$

$$a = \frac{h}{\sin 54} \approx 8.1$$