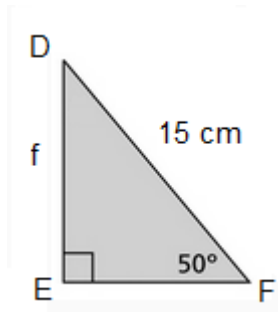


Lesson 9: Using Trigonometry to Find Missing Angles

Are You Ready? Possible Answers

1. Find the length of the missing side or hypotenuse. Round answers to the nearest tenth.

a.



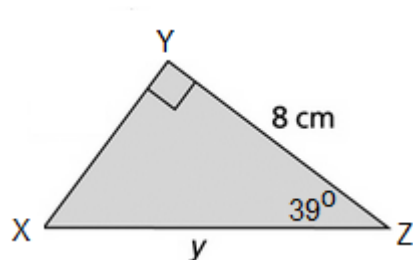
$$\sin 50^\circ = \frac{f}{15}$$

$$15(\sin 50^\circ) = 15\left(\frac{f}{15}\right)$$

$$15(\sin 50^\circ) = f$$

$$f = 11.5 \text{ cm}$$

b.



$$\cos 39^\circ = \frac{8}{y}$$

$$y(\cos 39^\circ) = y\left(\frac{8}{y}\right)$$

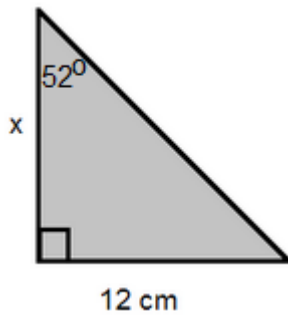
$$y(\cos 39^\circ) = 8$$

$$\frac{y(\cos 39^\circ)}{\cos 39^\circ} = \frac{8}{\cos 39^\circ}$$

$$y = \frac{8}{\cos 39^\circ}$$

$$y = 10.3 \text{ cm}$$

c.



$$\tan 52^\circ = \frac{12}{x}$$

$$x(\tan 52^\circ) = x\left(\frac{12}{x}\right)$$

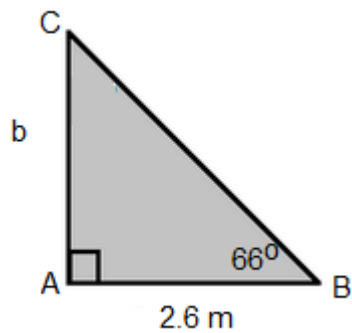
$$x(\tan 52^\circ) = 12$$

$$\frac{x(\tan 52^\circ)}{\tan 52^\circ} = \frac{12}{\tan 52^\circ}$$

$$x = \frac{12}{\tan 52^\circ}$$

$$x = 9.4\text{ cm}$$

2. Given the triangle ABC, where $\angle A = 90^\circ$ and $\angle B = 66^\circ$ and $c = 2.6\text{ m}$, find the length of side b to the nearest tenth.



$$\tan 66^\circ = \frac{b}{2.6}$$

$$2.6(\tan 66^\circ) = 2.6\left(\frac{b}{2.6}\right)$$

$$2.6(\tan 66^\circ) = b$$

$$b = 5.8\text{ m}$$