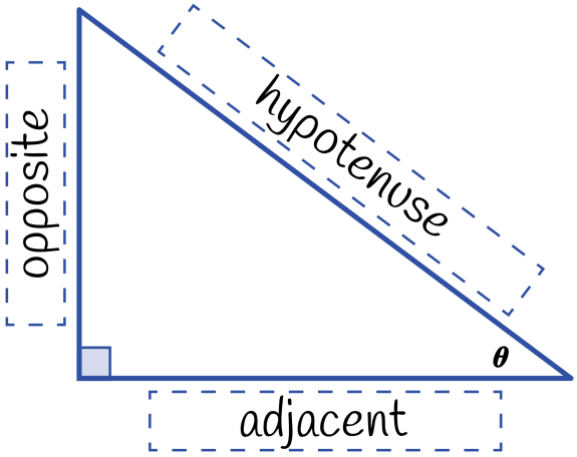
GUIDED NOTES: RIGHT-TRIANGLE TRIGONOMETRY

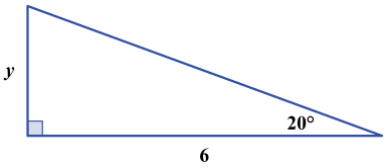


$$\sin\theta = \frac{opposite}{hypotenuse}$$

$$\cos\theta = \frac{adjacent}{hypotenuse}$$

$$\tan\theta = \frac{opposite}{adjacent}$$

Find the Missing Side:

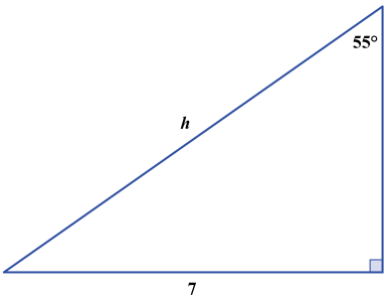


Find the value of y.

$$\tan(20°) = \frac{y}{6}$$

$$\Rightarrow y = 6 \cdot \tan(20°)$$

$$\Rightarrow y \approx 2.2$$



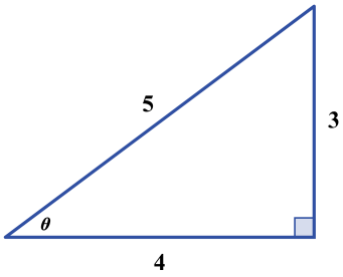
Find the value of h.

$$\sin(55°) = \frac{7}{h}$$

$$\Rightarrow h = \frac{7}{\sin(55°)}$$

$$\Rightarrow h \approx 8.5$$

Find the Missing Angle:



Find the value of θ.

$$\sin\theta = \frac{3}{5}$$

$$\Rightarrow \theta = \sin^{-1}\left(\frac{3}{5}\right)$$

$$\cos\theta = \frac{4}{5}$$

$$\Rightarrow \theta = \cos^{-1}\left(\frac{4}{5}\right)$$

$$\tan\theta = \frac{3}{4}$$

$$\Rightarrow \theta = \tan^{-1}\left(\frac{3}{4}\right)$$

$$\theta \approx 37°$$

Find the Unknown Value

Question 1

In right triangle ΔABC, where B is the right angle, the length of $\overline{AB}$ is 8 inches, and $\sin C = \frac{4}{7}$. What is the value of $\cos A$?

(A) $\frac{3}{7}$

(B) $\frac{4}{7}$

(C) $\frac{3}{\sqrt{33}}$

(D) $\frac{4}{\sqrt{33}}$

Question 2

In ΔJKL, shown in the figure below, $\overline{KM} \perp \overline{JL}$, $\overline{KL} = 40$ feet, $\angle JKL$ is a right angle, and the measure of $\angle KJL$ is 30°. What is the value of KM, in feet?

(F) 20

(G) $20\sqrt{3}$

(H) 40

(J) $40\sqrt{3}$