

DRILL

$$\textcircled{1} \quad \sqrt{3} \cos x + \cos x \tan x = 0$$

$$\cos x (\sqrt{3} + \tan x) = 0$$

$$* \cos x = 0$$

$$\sqrt{3} + \tan x = 0$$

$$\tan x = -\sqrt{3}$$

$$x = \frac{\pi}{2} \quad x = \frac{2\pi}{3}$$

$$x = \frac{3\pi}{2} \quad x = \frac{5\pi}{3}$$

$$\textcircled{2} \quad \cos^2 x + 2 \cos^2 x \sin x = 0$$

$$\cos^2 x (1 + 2 \sin x) = 0$$

$$\sqrt{\cos^2 x} = \sqrt{0}$$

$$\cos x = 0$$

$$1 + 2 \sin x = 0$$

$$2 \sin x = -1$$

$$\sin x = -\frac{1}{2}$$

$$x = \frac{\pi}{2} \quad x = \frac{7\pi}{6}$$

$$x = \frac{3\pi}{2} \quad x = \frac{11\pi}{6}$$

$$\begin{array}{r} 6 \cos \theta + \sqrt{3} \\ -4 \cos \theta \end{array} = \begin{array}{r} 4 \cos \theta \\ -4 \cos \theta \end{array}$$

$$\begin{array}{r} 2 \cos \theta + \sqrt{3} \\ -\sqrt{3} \end{array} = \begin{array}{r} 0 \\ -\sqrt{3} \end{array}$$

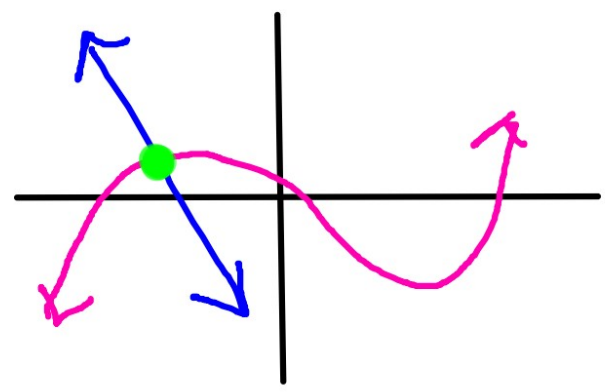
$$2 \cos \theta = -\sqrt{3}$$

$$\cos \theta = -\frac{\sqrt{3}}{2}$$

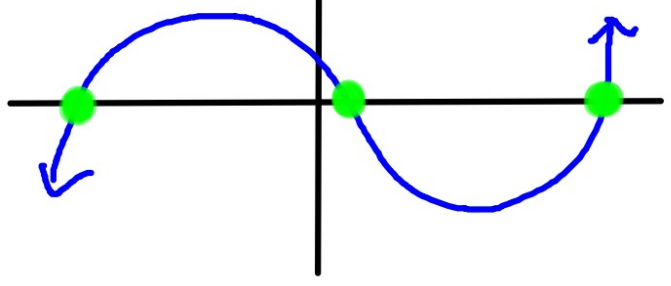
$$\theta = \frac{5\pi}{6}$$

$$\theta = \frac{7\pi}{6}$$

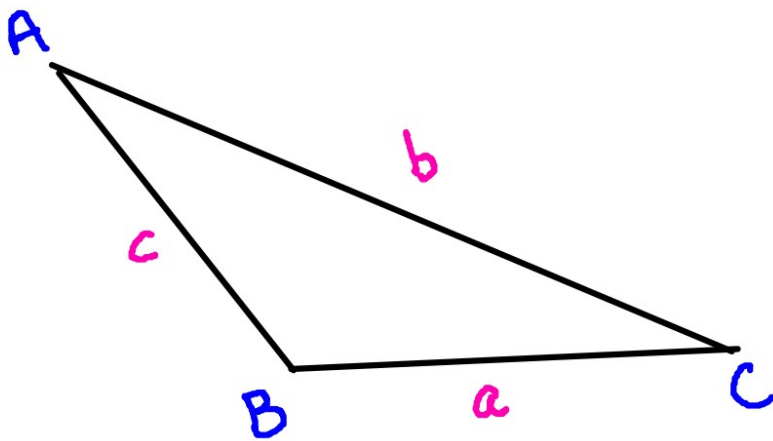
Solution(s)



Solution(s)



Law of Sines

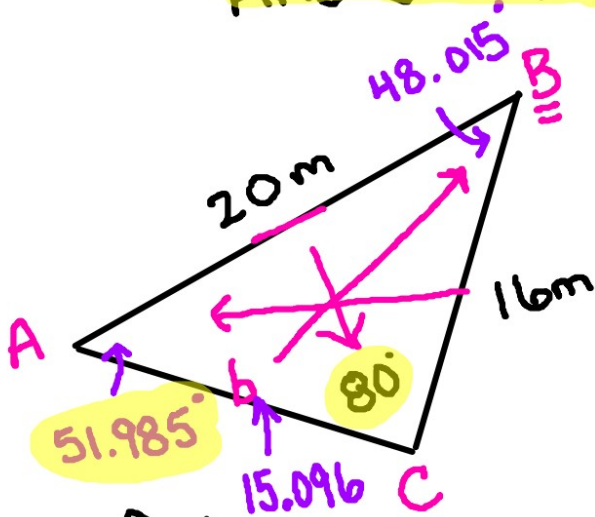


$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

* You would need one side and the angle opposite the side along with one other part.

Ex:

Find all the missing parts (Solve the triangle)



* To find an angle measure we use inverse trig functions.

$$m\angle B = 180 - (80 + 51.985)$$

$$m\angle B = 48.015^\circ$$

$$\frac{20}{\sin 80^\circ} \neq \frac{16}{\sin A}$$

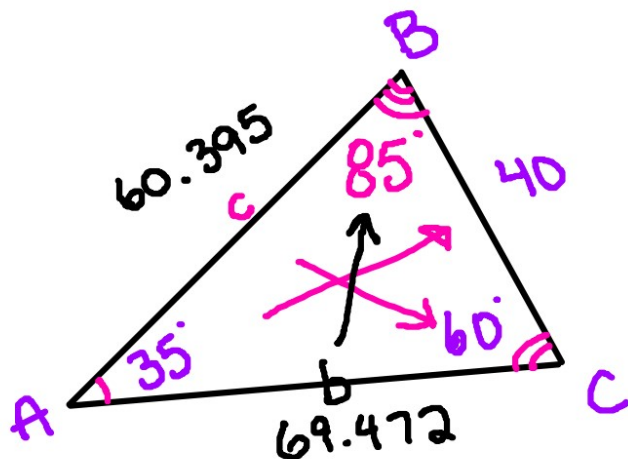
$$\frac{20 \sin A}{20} = \frac{16 \sin 80^\circ}{20}$$

$$\sin A = \frac{16 \sin 80^\circ}{20}$$

$$A = \sin^{-1}\left(\frac{16 \sin 80^\circ}{20}\right)$$

$$A \approx 51.985^\circ$$

Solve the triangle



$$\frac{40}{\sin 35^\circ} = \frac{c}{\sin 60^\circ}$$

$$\frac{c \cdot \cancel{\sin 35^\circ}}{\cancel{\sin 35^\circ}} = \frac{40 \sin 60^\circ}{\sin 35^\circ}$$

$$c \approx 60.395$$

$$\frac{40}{\sin 35^\circ} = \frac{b}{\sin 85^\circ}$$

$$\frac{b \cdot \cancel{\sin 35^\circ}}{\cancel{\sin 35^\circ}} = \frac{40 \sin 85^\circ}{\sin 35^\circ}$$

$$b \approx 69.472$$