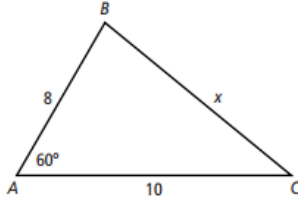


**9-5 HW: Law of Cosines**

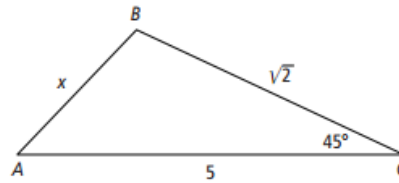
## Practice

Use the Law of Cosines. Find length  $x$  to the nearest tenth.

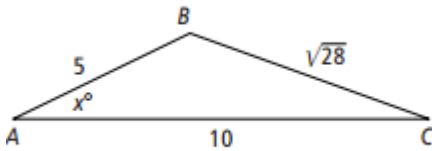
1)



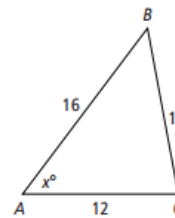
2)

Use the Law of Cosines. Find measure  $x$  to the nearest degree.

3)

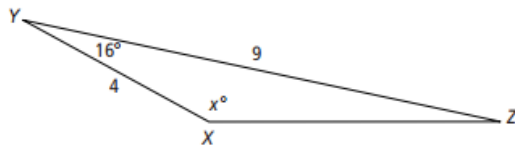


4)

5) In  $\triangle FGH$ ,  $f = 32$  in.,  $g = 79$  in., and  $h = 86$  in. Find  $m\angle G$ .6) In  $\triangle ABC$ ,  $a = 3$  ft.,  $b = 2.9$  ft., and  $c = 4.6$  ft. Find  $m\angle C$ .7) In  $\triangle XYZ$ ,  $x = 4$  cm.,  $y = 7$  cm., and  $z = 10$  cm. Find  $m\angle X$ .

Use the Law of Cosines and the Law of Sines. Find the missing angle, to the nearest tenth.

8)

9) In  $\triangle FGH$ ,  $f = 7$  yd.,  $g = 22$  yd., and  $m\angle H = 85^\circ$ . Find  $m\angle F$ .

10) The sides of a triangular lot are 158 ft, 173 ft, and 191 ft. Find the measure of the angle opposite the longest side to the nearest tenth of a degree. Then, find the area of the triangle.

11) A car travels 50 miles due west from point A. At point B, the car turns and travels at an angle of  $35^\circ$  north of due east. The car travels in this direction for 40 miles, to point C. How far is point C from Point A? Then, find the area of the triangle.12) In  $\triangle ABC$ ,  $m\angle A = 81.4^\circ$ ,  $b = 4.8$ , and  $c = 7.2$ . Use the Law of Cosines to find  $a$  and then use the Law of Sines to find the measure of angles B and C. Round to the nearest tenth. Your classmate says that this triangle does not exist. You say that it does. Who is correct? Explain.

Verify the following identities.

13)  $\csc x \sec x - \cot x = \tan x$

14)  $\cos\left(\frac{\pi}{2} - x\right) = \sin x$

15)  $\sin 2x \cos x - \cos 2x \sin x = \sin x$

16)  $\frac{\cos x}{1 + \sin x} + \frac{1 - \sin x}{\cos x} = \frac{2 \cos x}{1 + \sin x}$