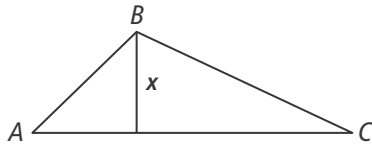




8-2 Additional Practice

Law of Sines and Law of Cosines

1. How can you derive the Law of Sines for angles A and C ?



2. In $\triangle MNO$, $m\angle M = 135^\circ$, $m = 18$, and $n = 14$. Find $m\angle O$. Round your answer to the nearest tenth.
3. In $\triangle ABC$, $m\angle A = 60^\circ$, $a = 8$, and $b = 6$. Find $m\angle B$. Round your answer to the nearest tenth.
4. Describe and correct the error a student made in using the Law of Cosines to solve for b in $\triangle ABC$ where $m\angle B = 120^\circ$, $a = 16$, and $c = 14$.

$$b^2 = 16^2 + 14^2 - (16)(14)(\cos 120^\circ) \qquad b^2 = 16^2 + 14^2 - \underline{\hspace{1cm}} (16)(14)(\cos 120^\circ)$$

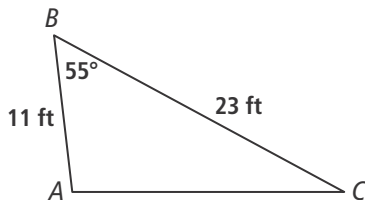
$$b^2 = 256 + 196 - (224)(-0.5) \qquad b^2 = 256 + 196 - (\underline{\hspace{1cm}})(-0.5)$$

$$b^2 = 256 + 196 + 112 = 564 \qquad b^2 = 256 + 196 + \underline{\hspace{1cm}} = 676$$

$$b \approx 23.7$$

$$b = \underline{\hspace{1cm}}$$

5. The triangle illustrates the side view of a roof truss with edge-lengths of 11 ft and 23 ft. The angle between the edges is 55° . What is the length of AC to the nearest foot?



6. Dyani throws a ball to Edgar, who is 8 m away. When Edgar catches the ball, he turns 55° , and then throws the ball 9 m to Hana. What angle does Hana turn to throw the ball to Dyani? Round to the nearest tenth.