Applying the Law of Sines

VOCABULARY

If ABC is a triangle with sides a, b, and c, then according to the **law of sines,**

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C} \quad \text{or} \quad \frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}.$$

Find the area of the triangle with the given side lengths and included angle.

14. $A = 70°, b = 28, c = 31$

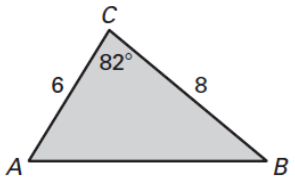
15. $B = 35°, a = 12, c = 35$

16. $C = 95°, a = 8, b = 3$

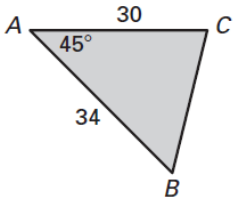
17. $A = 10°, b = 5, c = 6$

Find the area of $\triangle ABC$.

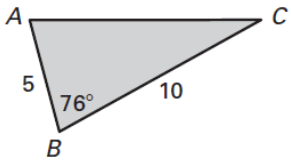
18.



19.



20.



21. ***Surveying*** A surveyor wants to find the width of a narrow, deep gorge from a point on the edge. To do this, the surveyor takes measurements as shown in the figure. How wide is the gorge?