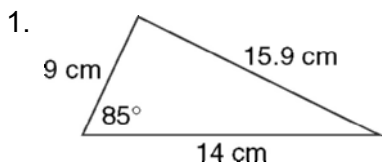


LESSON
13-5

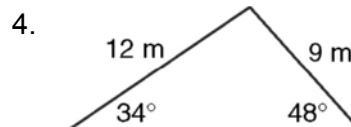
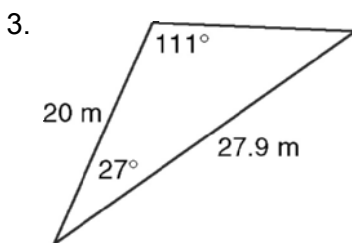
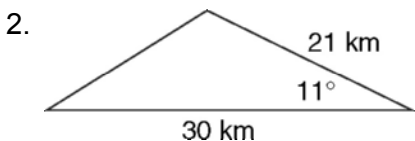
Practice A
The Law of Sines

Find the area of each triangle. Round to the nearest tenth.

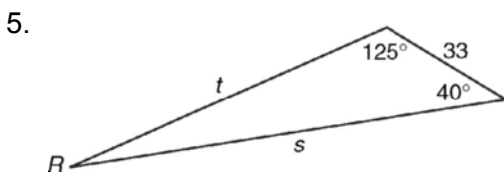


a. Write the formula for the area of a triangle.

b. Substitute the known values and evaluate.

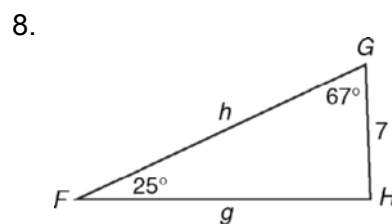
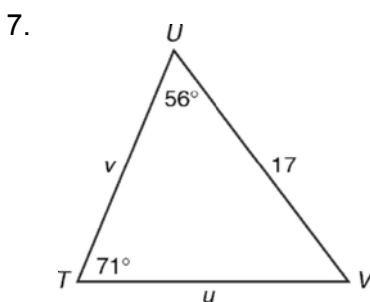
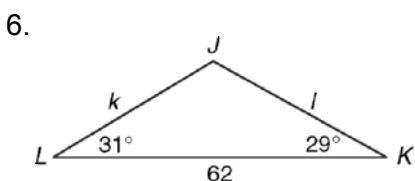


Solve each triangle. Round to the nearest tenth.



a. Find the measure of the third angle.

b. Use the Law of Sines to find the unknown side lengths.



Solve.

9. Two sides of a triangular garden have 6 feet and 9 feet of edging. To the nearest tenth, what is the area of the garden if the angle formed by the edged sides is 80° ?

when the value of the trigonometric function is known.

2. $\frac{\pi}{3}, \frac{2\pi}{3}$
3. $\frac{\pi}{4}, \frac{3\pi}{4}$
4. $\frac{\pi}{6}, \frac{11\pi}{6}$
5. a. $\frac{\pi}{4}, \frac{7\pi}{4}$
b. $\frac{\pi}{4} + (2\pi)n, \frac{7\pi}{4} + (2\pi)n$
6. a. $0, \pi$
b. $(2\pi)n, \pi + (2\pi)n$
c. $360n, 90 + 360n$

LESSON 13-5

Practice A

1. a. $A = \frac{1}{2}(9)(14)\sin 85$
b. 62.8 cm^2
2. 60.1 km^2
3. 126.7 m^2
4. 53.5 m^2
5. a. $R = 15^\circ$
b. $t \approx 82; s \approx 104.4$
6. $m\angle J = 120^\circ;$
 $k \approx 34.7;$
 $l \approx 36.9$
7. $m\angle V = 53^\circ;$
 $v \approx 14.4;$
 $u \approx 14.9$
8. $m\angle H = 88^\circ;$
 $h \approx 16.6;$
 $g \approx 15.2$
9. 26.6 ft^2

Practice B

1. 41.9 m^2
2. 84 ft^2
3. 114.2 cm^2
4. $m\angle N = 61^\circ; n \approx 25.6; m \approx 17.2$
5. $m\angle P = 27^\circ; r \approx 12.9; p \approx 6.6$
6. $m\angle D = 33^\circ; e \approx 36.6; c \approx 40.0$
7. $m\angle Y = 64^\circ; x \approx 10.4; y \approx 12.6$

8. $m\angle C = 44^\circ; a \approx 48.9; b \approx 58.1$
9. $m\angle F = 73^\circ; h \approx 7.7; f \approx 8.5$
10. 0 triangles
11. 1 triangle; $c \approx 11.3 \text{ cm}; m\angle B = 56^\circ;$
 $m\angle C = 39^\circ$
12. 1 triangle; $c \approx 10.3 \text{ cm}; m\angle B = 36^\circ;$
 $m\angle C = 24^\circ$
13. $38.0 \text{ cm}; 40.3 \text{ cm}$

Practice C

1. 361.6 m^2
2. 81.4 cm^2
3. 750.8 km^2
4. $m\angle R = 45^\circ; r \approx 20; p \approx 28$
5. $m\angle R = 28^\circ; t \approx 15.5; r \approx 7.4$
6. $m\angle X = 79.2^\circ; m\angle Y = 61.8^\circ; x \approx 15.6$
7. 0 triangles
8. 1 triangle; $c \approx 20.1 \text{ cm}; m\angle B = 16.6^\circ;$
 $m\angle C = 73.4^\circ$
9. 0 triangles
10. 2 triangles; $c \approx 28.4 \text{ cm}, m\angle B = 65.5^\circ,$
 $m\angle C = 59.5^\circ; c \approx 6.0 \text{ cm}, m\angle B = 114.4^\circ,$
 $m\angle C = 10.5^\circ$
11. 1 triangle; $c \approx 25.4 \text{ cm}; m\angle B = 47.1^\circ;$
 $m\angle C = 57.9^\circ$
12. 1 triangle; $c \approx 8.0 \text{ cm}; m\angle B = 90^\circ;$
 $m\angle C = 60^\circ$
13. 1 pen; 19.4 m

Reteach

1. a. $64^\circ; 6; 15; 40.4 \text{ m}^2$
2. a. $76^\circ; 16; 28; 217.3 \text{ yd}^2$
3. $34^\circ; 67^\circ; 12$
4. 79°
5. $b \approx 21.1$
6. $c \approx 19.8$

Challenge

1. about 0.70 mile from shore; about 0.97 mile from one point, about 1.86 miles from the second point.
2. In $\triangle ABC$, use \overline{AC} , which has length b , as the base. Draw a perpendicular segment from vertex B to line AC . The length h is the height of $\triangle ABC$ and $h = a \sin C$. By