Algebra 2/Trig Honors Name_____

Chapter 13 Review A

Find the reference angle.

1) 350°

2) −140°

3) $\frac{61\pi}{18}$

4) $-\frac{17\pi}{12}$

Convert each degree measure into radians and each radian measure into degrees.

5) $\frac{34\pi}{9}$

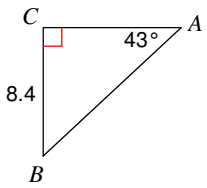
6) $-\frac{23\pi}{12}$

7) -195°

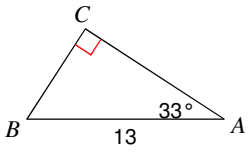
8) -170°

Solve each triangle. Round answers to the nearest tenth.

9)



10)



Solve each equation for $0 \le \theta < 360$. Round your answers to the nearest hundredth.

11) $\tan\theta = 9.31$

12) $-0.29 = \cos\theta$

13) $-1 = \tan\theta$

14) $-0.95 = \sin\theta$

Find a positive and a negative coterminal angle for each given angle.

15) −150°

16) $-\frac{7\pi}{4}$

State the number of possible triangles that can be formed using the given measurements.

17) $m\angle C = 133°$, $b = 16$ mi, $c = 5$ mi

18) $m\angle A = 101°$, $c = 4$ km, $a = 28$ km

19) $m\angle C = 50°$, $b = 35$ yd, $c = 34$ yd

Solve each triangle. Round your answers to the nearest tenth.

20) $m\angle B = 65°$, $a = 8$ m, $b = 12$ m

21) $m\angle A = 64°$, $c = 21$ yd, $a = 20$ yd

22) $a = 15$ km, $b = 17$ km, $c = 28$ km

23) $m\angle C = 81°$, $b = 28$ yd, $a = 15$ yd

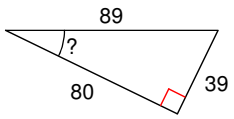
Find the area of each triangle to the nearest tenth.

24) In ΔABC, $a = 7$ ft, $c = 16$ ft, $b = 15$ ft

25) In ΔQRP, $m\angle Q = 146°$, $p = 12$ ft, $r = 10$ ft

Find the measure of the indicated angle to the nearest degree.

26)



Use the given point on the terminal side of angle θ to find the value of the trigonometric function indicated.

27) $\cot\theta$; $(-3, -4)$

28) $\cos\theta$; $(\sqrt{19}, -9)$

Find the area and arc length of each sector.

29) $r = 13$ ft, $\theta = 120°$

30) $r = 15$ mi, $\theta = \frac{3\pi}{2}$

31) Suppose a pumpking was launched with an initial speed of 80 ft/sec at an angle of 60 degrees and from an initial height of 15 ft. Find how far the pumpkin traveled.

32) A model airplane takes off and is 125 ft high and 500 ft away horizontally. Assume the plane is flying in a straight line at 40ft/sec. Writ a set of parametric equations for the flight path of the plane.

Answers to Chapter 13 Review A

1) $10°$

2) $40°$

3) $\frac{7\pi}{18}$

4) $\frac{5\pi}{12}$

5) $680°$

6) $-345°$

7) $-\frac{13\pi}{12}$

8) $-\frac{17\pi}{18}$

9) $m\angle B = 47°,\ b = 9,\ c = 12.3$

10) $m\angle B = 57°,\ a = 7.1,\ b = 10.9$

11) $\{83.87, 263.87\}$

12) $\{106.86, 253.14\}$

13) $\{135, 315\}$

14) $\{251.81, 288.2\}$

15) $210°$ and $-510°$

16) $\frac{\pi}{4}$ and $-\frac{15\pi}{4}$

17) None

18) One triangle

19) Two triangles

20) $m\angle C = 77.8°,\ m\angle A = 37.2°,\ c = 12.9$ m

21) $m\angle B = 45.3°,\ m\angle C = 70.7°,\ b = 15.8$ yd
Or $m\angle B = 6.7°,\ m\angle C = 109.3°,\ b = 2.6$ yd

22) $m\angle C = 122°,\ m\angle A = 27°,\ m\angle B = 31°$

23) $m\angle A = 29.9°,\ m\angle B = 69.1°,\ c = 29.6$ yd

24) 52.3 ft²

25) 33.6 ft²

26) $26°$

27) $\frac{3}{4}$

28) $\frac{\sqrt{19}}{10}$

29) $\frac{26\pi}{3}$ ft; $\frac{169\pi}{3}$ ft²

30) $\frac{45\pi}{2}$ mi; $\frac{675\pi}{4}$ mi²

31) 181.5 ft

32) $x = 38.8t; y = 9.7t$