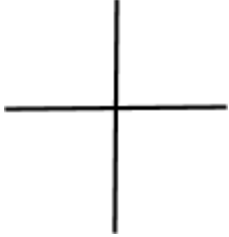**Unit 8 Review - Trigonometry**   NAME _____

Angles in Degrees

Sketch each angle in standard position. State the quadrant in which it terminates.
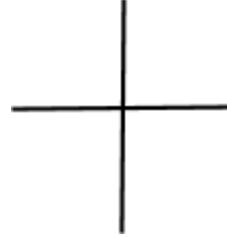
1. 150° 2. -340° 3. 560°
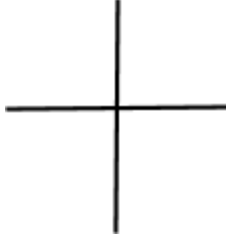
Quadrant: _____   Quadrant: _____   Quadrant: _____

Find the coterminal angle between 0° and 360° .

4. 750° 5. -270° 6. 405°

Angles in Radians

Convert each angle into radians.

7. 230° 8. -400°
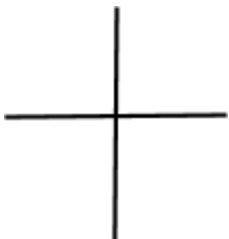
Convert each angle into degrees.

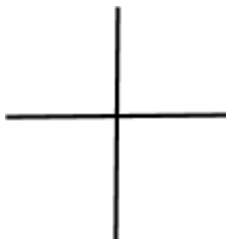9. $\frac{8\pi}{3}$ 10. $-\frac{\pi}{4}$

Sketch each angle in standard position. State the quadrant in which it terminates.
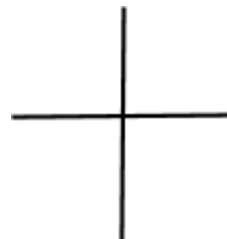
11. $\frac{11\pi}{6}$ 12. π 13. $-\frac{5\pi}{4}$
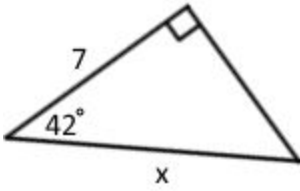
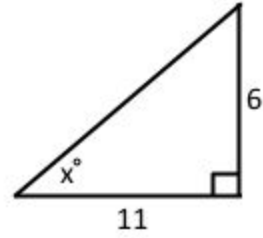Quadrant: _____   Quadrant: _____   Quadrant: _____

Right Triangle Trig

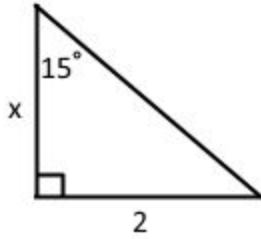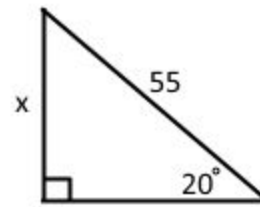*Find the value of x using trigonometric ratios.*

14.

15.

16.

17.

18. To find the height of the Times Square New Year's Eve Ball, a partygoer moves 140 feet away from the base of the pole and estimates the angle of elevation to the NYE Ball to be about 44°. About how high is the ball?

Exact Values of Trig Functions

Complete the unit circle.

Determine the exact value of each trig function by using the unit circle.

19. $sin180^o =$

20. $cos\frac{4\pi}{3} =$

21. $cot60^o =$

22. $sec - 45^o$

23. $csc\frac{19\pi}{6} =$

24. $tan\frac{\pi}{2} =$

Graphs and Equations of Sine and Cosine

For each graph, determine the amplitude, period, frequency, and vertical shift. Then write the equation.

25.

Amplitude: _____   Period: _____

Frequency: _____   Vertical Shift: _____

Equation:_____

26.

Amplitude: _____ Period: _____

Frequency: _____ Vertical Shift: _____

Equation:_____

27. $y = -2cos\left(\frac{1}{3}x\right) - 7$

Amplitude: _____ Period: _____

Frequency: _____ Vertical Shift: _____

28. $y = 4sin(-4x) + 2$

Amplitude: _____ Period: _____

Frequency: _____ Vertical Shift: _____

Applications of Trig Function

29. An elk population fluctuates periodically over time. The average population is 300 antelopes. Every 5 years the population reaches a maximum of 350 elk.   Write a cosine function to model the elk population over time, where x represents time in years.

30. Each day, the tide continuously goes in and out, raising and lowering a boat in the harbor. At low tide, the boat is only 2 feet above the ocean floor. And, 6 hours later, at peak high tide, the boat is 40 feet above the ocean floor. Write a sine function that describes the boat's distance above the ocean floor as it relates to time, where x represents time in hours.