Algebra 2 **Chapter 9 Review Worksheet** Assignment #____

Name _____ Date _____ Period _____

1. In a right triangle, θ is an acute angle and $\cos\theta = \frac{6}{11}$. Evaluate sinθ and tanθ.

2. The shadow of a tree measures 25 feet from its base. The angle of elevation to the sun is 31°. How tall is the tree? Draw and label a right triangle to represent the problem. Round your answer to the nearest foot.

#3-4: Draw the following angles in standard position.

3. 462°

4. –311°

5. Find one positive angle and one negative angle that are coterminal with 382°.

#6-9: Convert the degree measure to radians or the radian measure to degrees.

6. 30°

7. –225°

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

9. $\frac{5\pi}{3}$

#10-13: Find the reference angle θ' for the given angles.

10. 92°

11. –307°

12. 215°

13. $\frac{11\pi}{6}$

#14-15: Given a point on the terminal side of angle θ in standard position, find sinθ, cosθ and tanθ.

14. (24, –7)

15. (–2, 9)

sinθ = _____

cosθ = _____

tanθ = _____

sinθ = _____

cosθ = _____

tanθ = _____

#16-19: Evaluate the function without using a calculator. Write your answer as an exact value.

16. sin 330°

17. cos (–405°)

18. $\sin\frac{13\pi}{6}$

19. $\tan\frac{11\pi}{3}$

#20-21: Identify the amplitude, period and any shifts of each function. Then graph the function.

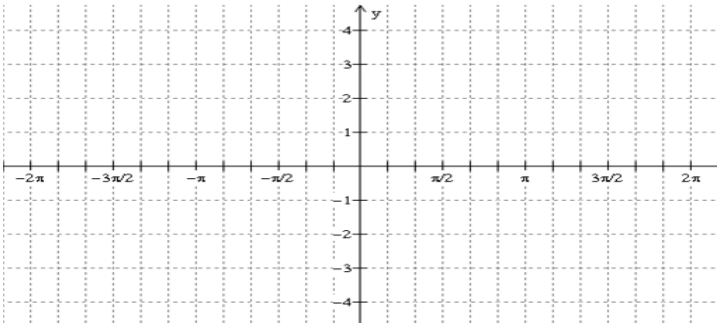
20. $y = \cos(x + \pi) + 2$

Amplitude: _____

Period: _____

Phase shift: _____

Vertical shift: _____



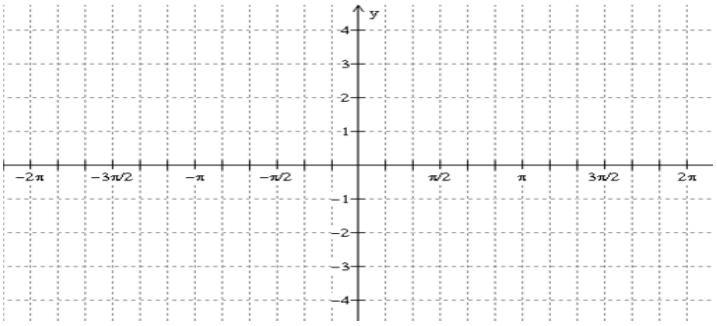
21. $f(x) = -3\sin 2\left(x - \frac{\pi}{2}\right)$

Amplitude: _____

Period: _____

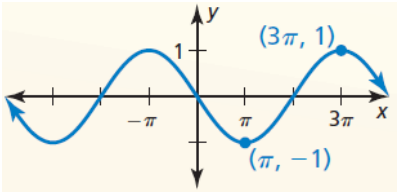
Phase shift: _____

Vertical shift: _____



#22-23: Write a function for each sinusoid.

22.



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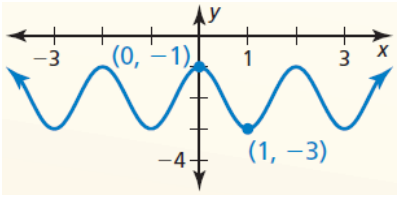

24. You put a reflector on a spoke of your bicycle wheel. The highest point of the reflector is 25 inches above the ground, and the lowest point is 2 inches above the ground. The reflector makes one revolution per second. Write a model for the height h (in inches) of the reflector as a function of time t (in seconds) given that the reflector is at its lowest point when $t = 0$.

#25-26: Use the Pythagorean Identity and Tangent Identity to find the other two trig values.

25. $\cos\theta = \frac{12}{13}, \quad \frac{3\pi}{2} < \theta < 2\pi$

26. $\tan\theta = \frac{3}{4}, \quad 0 < \theta < \frac{\pi}{2}$