**Midterm Review** **Name**_____
**Chapter 6**

**Change each degree measure to radian measure in terms of $\pi$.**

1. 135° 2. –312° 3. 1250° 4. –75°

**Change each radian measure to degree measure. Round to the nearest tenth if necessary.**

5. 17 6. $\frac{11\pi}{3}$ 7. –3.5 8. $-\frac{\pi}{6.2}$

9. Determine the angular velocity if 11.3 revolutions are completed in 3.9 seconds. Round to the nearest tenth.

10. Determine the linear velocity of a point rotating at 15 revolutions per minute at a distance of 3.04 meters from the center of a rotating object. Round to the nearest tenth.

11. A gyroscope of radius 18 cm rotates 35 times per minute. Find the linear velocity of a point on the edge of the gyroscope. Express in centimeters per second.

12. A ferris wheel rorates one revolution every 50 seconds. What is its angular velocity in radians per second?

13. A clothes dryer is rotating at 500 revolutions per minute. Determine its angular velocity in radians per second.

14. The diameter of a circle is 22 inches. If a central angle measures 78°, find the lenth of the intercepted arc.

15. Find the degree measure of the central angle associated with an arc that is 13.8 cm long in a circle with a radius of 6 cm.

16. Find the area of a sector if the central angle measures 30° and the radius of the circle is 15 cm.

17. Write an equation of the sine function with amplitude 5, period $3\pi$, and phase shift $-\pi$.

18. Write an equation of the tangent function with period $\frac{\pi}{4}$, phase shift $\pi$, and vertical shift 1.

19. State the amplitude, period and phase shift of the function $y = -0.4 \sin (10x + \frac{\pi}{2})$

20. State the period and phase shift of the function $y = 3\tan (4x - \frac{\pi}{3})$

21. State the amplitude, period and phase shift of the function $y = \frac{1}{3} \sin (2x - \frac{\pi}{3})$

22. State the period and phase shift of the function $y = \frac{1}{2} \cot ( 2x - \frac{\pi}{4})$

23. What is the equation for the inverse of $y = \text{Cos } x + 1$?

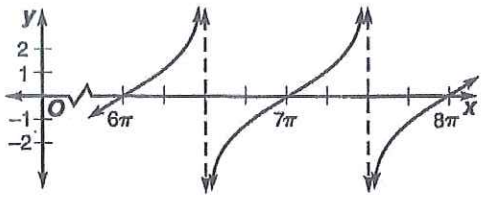
24. What is the equation for the inverse of $y = \frac{1}{2} \text{Sin } x$?

25. Evaluate $\cos (\text{Tan}^{-1} \frac{\sqrt{3}}{3} + \text{Sin}^{-1} \frac{1}{2})$

26. Evaluate $\text{Cos}^{-1}(\tan \frac{\pi}{4})$

27. Find the values of x for which the equation $\cos x = 1$ is true.

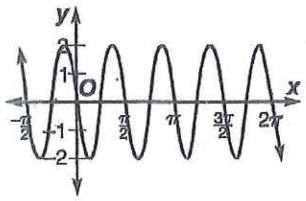
28. What is the equation of the graph shown at the right?




a. $y = \tan x$ B. $y = \cot x$

C. $y = \cot 2x$ D. $y = \tan 2x$

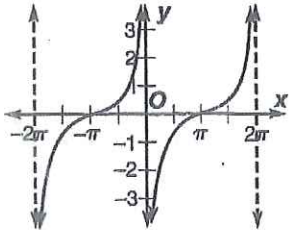
29. What is the equation of the graph shown at the right?




A. $2 \cos \frac{x}{4}$ B. $y = 2 \cos 4x$

B. $y = -2 \sin \frac{x}{4}$ D. $y = -2 \sin 4x$

30. What is the equation of the graph shown at the right?




A. $y = \tan (\frac{x}{2} + \pi)$ B. $y = \tan (\frac{x}{2} + \frac{\pi}{2})$

C. $y = \tan (\frac{x}{4} + \pi)$ D. $y = \tan (\frac{x}{4} + \frac{\pi}{4})$