Chapter 1 Test -- Form A **Name:** Practice

Find the exact value of each expression.

1. $\sin(570°)$ **2.** $\cos\left(-\frac{\pi}{3}\right)$ **3.** $\tan\left(\frac{2\pi}{3}\right)$

1. _____ 2. _____ 3. _____

4. $\csc(315°)$ **5.** $\sec\left(\frac{\pi}{4}\right)$ **6.** $\cot(-270°)$

4. _____ 5. _____ 6. _____

7. $\sin\left(\frac{5\pi}{6}\right)$ **8.** $\tan(-135°)$ **9.** $\cos(225°)$

7. _____ 8. _____ 9. _____

10. $\sin^{-1}\left(\frac{\sqrt{2}}{2}\right)$ **11.** $\cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)$ **12.** $\tan^{-1}\left(\frac{1}{\sqrt{3}}\right)$

10. _____ 11. _____ 12. _____

Solve each problem.

13. Find the exact value of the arc length intercepted by a central angle of 105° in a circle with a radius of 9 centimeters.

13. _____

14. Find the degree measure (to the nearest hundredth of a degree) for an angle of 3 radians.

14. _____

15. Determine whether $-340°$ and $1060°$ are coterminal. Explain your answer.

Chapter 2 Test -- Form A **Name:** Practice

Sketch at least one cycle of the graph of each function. Draw and label the axes appropriately. Determine the period, range, and amplitude for each function.

1. $y = \sin\left(x - \frac{\pi}{4}\right)$

period: _____
range: _____
amplitude: _____

2. $y = \cos(2x)$

period: _____
range: _____
amplitude: _____

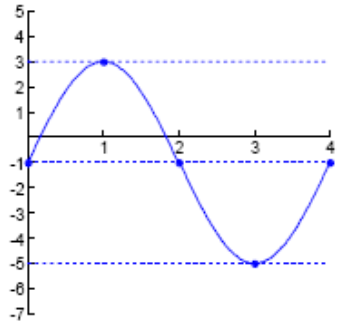
3. $y = -2\sin(x)$

period: _____
range: _____
amplitude: _____

4. $y = \cos(x) + 1$

period: _____
range: _____
amplitude: _____

5. **Determine the amplitude and period for the sine curve in the accompanying graph. Write its equation in the form $y = A\sin(B[x - C]) + D$.**



period: _____ *amplitude:* _____

equation: _____

Sketch at least one cycle of the graph of each function. Draw and label the axes appropriately. Determine the period, asymptotes, and range for each function.

6. $y = \tan(x - \pi)$

period: _____
asymptotes: _____
range: _____

7. $y = -\sec(x) + \pi$

period: _____
asymptotes: _____
range: _____

8. $y = \csc(3x)$

period: _____
asymptotes: _____
range: _____

Solve each problem.

9. Graph the function $y = \sin x - \cos x$ for x between -2π and 2π using the technique of adding the y-coordinates. Draw and label the axes appropriately.

10. The population in a particular herd of antelope in South Africa oscillates between approximately 500 and 800. The maximum number can be found at the beginning of January, while the minimum number of can be found at the beginning of July. Express the population as a function of time in the form $y = A\sin[B(x - C)] + D$, where January is counted as month one $(x = 1)$.

10. _____

Keys to Review

CHAPTER 1

Form A:

1. $-\frac{1}{2}$ **2.** $\frac{1}{2}$ **3.** $-\sqrt{3}$ **4.** $-\sqrt{2}$ **5.** $\sqrt{2}$ **6.** 0

7. $\frac{1}{2}$ **8.** 1 **9.** $-\frac{\sqrt{2}}{2}$ **10.** $\frac{\pi}{4}$ **11.** $\frac{5\pi}{6}$ **12.** $\frac{\pi}{6}$

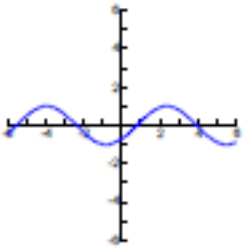
13. $\frac{21\pi}{4}$ cm **14.** 171.89° **15.** No. The difference (1400°) is not a multiple of 360°.

16. $-\frac{\sqrt{3}}{3}$ **17.** $-\frac{5\sqrt{61}}{61}$ **18.** 32 ft **19.** 7.0 mph **20.** 6.55 cm

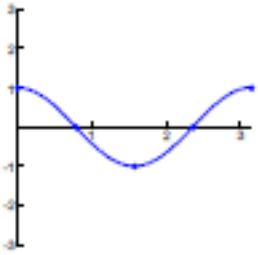
CHAPTER 2

Form A:

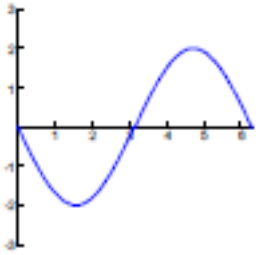
1. period: 2π, amp: 1
range: $[-1, 1]$



2. period: π, amp: 1
range: $[-1, 1]$



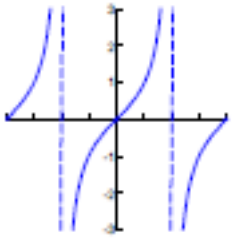
3. period: 2π, amp: 2
range: $[-2, 2]$



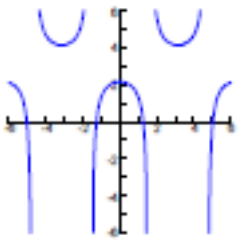
4. period: 2π, amp: 1
range: $[0, 2]$

5. period: 4, amplitude: 4,
equation: $y = 4\sin\left(\frac{\pi}{2}x\right) - 1$

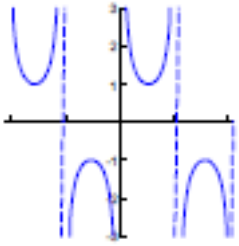
6. period: π, range $(-\infty, \infty)$
asymptotes: $x = \frac{\pi}{6} + k\pi$



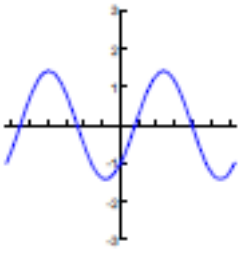
7. period: 2π, asymptotes: $x = \frac{\pi}{2} + k\pi$
range: $(-\infty, \pi - 1] \cup [1 + \pi, \infty)$



8. period: $\frac{2\pi}{3}$, asymptotes: $x = \frac{\pi}{3}k$
range: $(-\infty, -1] \cup [1, \infty)$



9. drawn scale = 1



10. $y = -150\sin\left(\frac{\pi}{6}(x - 4)\right) + 650$