Pre-AP Precalculus Name_____

Test # 6 Review Date_____Period____

Find the exact value for the expression.

1. $sin^{-1}\left(\frac{-\sqrt{3}}{2}\right)$
2. $cos^{-1}\left(sin\left(\frac{4\pi}{3}\right)\right)$
3. $cot\left(cos^{-1}\left(\frac{3}{8}\right)\right)$
4. $cos\left(tan^{-1}(v)\right)$

Find all solutions in the interval $x \in [0, 2\pi)$. (exact where needed)

5. $sinx = -0.354$
6. $secx = -1.746$
7. $3tanx + \sqrt{3} = 0$
8. $8secx + 16 = 0$
9. $sin2x = cosx$
10. $cotx = 2cosx$
11. $sinxsecx + 2sinx$
12. $6sin3x = 3$
13. $4cos^2x - 3 = 0$
14. $4sin^2x - 3sinx - 1 = 0$

A weighted spring is compressed 15 cm above its rest position and released at time 0. It takes the spring 4 seconds to complete one cycle.

15. a) find an equation that models the spring's motion

    b) find the amount of time that passes before the weight reaches the point 5 cm below rest for the third time.

A ferris wheel with a 200 foot diameter makes one rotation every 90 seconds. You get on at a point 5 feet above ground at time 0

16. a) find an equation that models the spring's motion

    b) find the height you are above ground after 2 min 20 sec.

1)_____

2)_____

3)_____

4)_____

5)_____

6)_____

7)_____

8)_____

9)_____

10)_____

11)_____

12)_____

13)_____

14)_____

15a)_____

b)_____

16a)_____

b)_____