Name: _____ Date: _____ Per: _____

PC5-2A: Solving Trig Equations #1

Solve each equation on the interval $[0, 2\pi]$

A. BASIC EQUATIONS: *Isolate the basic trig function, then solve with Unit Circle* **[n] = number of solutions**

1) $\cos\theta = \frac{1}{2}$ **[2]**

2) $\sin\theta = -\frac{\sqrt{3}}{2}$ **[2]**

3) $2\sin\theta - 1 = 0$ **[2]**

4) $\sin\theta + \sqrt{2} = -\sin\theta$ **[2]**

5) $\sqrt{3}\csc\theta - 2 = 0$ **[2]**

6) $3\sin\theta + 1 = \sin\theta$ **[2]**

Be sure to write ± for all square roots, and find all solutions

7) $\tan^2\theta - 1 = 0$ **[4]**

8) $4\sin^2\theta - 1 = 0$ **[4]**

9) $3\sec^2\theta - 4 = 0$ **[4]**

B. FRACTIONALS & MULTIPLES: *Isolate the basic trig function, then solve with Unit Circle. Let x = the value inside the parenthesis (Substitution).*

10) $\sin(\frac{1}{2}\theta) = \frac{1}{2}$ **[2]**

11) $\cos(\frac{1}{3}\theta) = -\frac{1}{2}$ **[1]**

12) $\tan(\frac{1}{4}\theta) = \sqrt{3}$ **[1]**

13) $\csc(\frac{1}{2}\theta) + 2 = 0$ **[0]**

14) $\sqrt{3}\sec(\frac{1}{3}\theta) = 2$ **[1]**

15) $5\cot(\frac{1}{4}\theta) - 5 = 0$ **[1]**

16) $\sin(2\theta) = \frac{1}{2}$ **[4]**

17) $\cos(3\theta) = -\frac{\sqrt{2}}{2}$ **[6]**

18) $\tan(4\theta) = -\sqrt{3}$ **[8]**

19) $3\sin(2\theta) = -3$ **[2]**

20) $-2\sec(3\theta) = -4$ **[6]**

21) $4\csc(4\theta) = 8$ **[8]**