Pre-Calculus Mini-WS   Name: ______________________

Necessary Algebra Skills     Period: _____

I. Multiply (FOIL) each of the following.

1. \((x - 1)(x + 2)\)

2. \((\sin \theta - 1)(\sin \theta + 2)\)

3. \((\cos \theta - 4)^2\)

II. Factor each of the following.

4. \(x^2 - 5x - 36\)

5. \(\sin^2 \theta - 5 \sin \theta - 36\)

6. \(y^2 - 25\)

7. \(\tan^2 \theta - 25\)

III. Find a common denominator and then simplify to a single fraction.

8. \(\frac{2}{x} + \frac{3}{y}\)

9. \(\frac{2}{\cos \theta} + \frac{3}{\sin \theta}\)
10. \( \frac{y - x}{x - y} \)

11. \( \frac{\tan \theta - \sin \theta}{\sin \theta - \tan \theta} \)

IV. Multiply the numerator and denominator of each fraction by the conjugate of the denominator.

12. \( \frac{2}{1 + \sqrt{3}} \)

13. \( \frac{2}{1 + \sin \theta} \)

14. \( \frac{1}{-2 - \sqrt{7}} \)

15. \( \frac{1}{-1 - \cos \theta} \)

You may not understand the WHY behind practicing these algebraic skills, but it will make more sense once we teach the next lesson.