Algebra I Review Sheet Rev 2013 Mathematician: _____

Unit 6-1: Factoring when $a > 1$, Quadratic Formula Date: _____ Per: _____

Factor Completely. Show all work and then plug into graphing calculator to check.

1) $7x^2 - 8x + 1$

2) $4k^2 + 3 = 7k$

3) $3x^2 + 4x - 4$

Factor and Solve for the following polynomials.

4) $6b^2 + 13b - 5$

5) $9x^2 - 12x + 4$

6) $(2x - 3)(5x + 8) = 0$

7) $49x^2 - 64$

8) The area of a rectangle is $(8x^2 - 22x - 21)$. The length of the rectangle is $(4x + 3)$. What is the width of the rectangle?

9) The area of a rectangle is given by the expression $6x^2 - 7x - 10$. Which of the following represents the length and width of the rectangle in terms of x?

10) A square has an area of $25x^2 + 20x + 4$. Which of the following represents the length of the side of the square?

11) Ms. Snyder's class was asked to find the ***area*** of the rectangle which has $2x^2 + 9x - 5$ square inches and a width of $x + 5$ inches. Write out the best equation for the area of the rectangle.

$x + 5$

12) Determine whether expression "A" is equivalent to expression "B." If not, change **expression B** to make it equivalent.

Expression A	***Expression B***	Equivalent? Yes/No	Corrected ***Expression B*** if needed
$2x^2 + 6x - 20$	$(x + 5)(x - 2)$		
$2x^2 - 11x + 5$	$(2x - 1)(x - 5)$		

Solve the following using the Square Root Theorem.

13) $3x^2 = 108$

14) $4x^2 - 13 = 0$

15) $10x^2 - 13 = 0$

Determine the discriminant and identify the type of solutions.

16) $4x^2 - 12x + 11 = 0$

17) $4x^2 + 12x + 9 = 0$

18) $5x^2 - 4x - 1 = 0$

A: ____ B: _____ C: _____

Discriminant: _____

Type of Sols: _____

A: ____ B: _____ C: _____

Discriminant: _____

Type of Sols: _____

A: ____ B: _____ C: _____

Discriminant: _____

Type of Sols: _____

19) Write out the Quadratic Formula by memory. _____

Use the quadratic formula to solve the equation. Write "none" if it has no solution. Round to two decimal places.

20) $x^2 + 3x + 2$

$x =$ _____ and $x =$ _____

21) $2x^2 + 6 = 5x$

$x =$ _____ and $x =$ _____

22) $2x^2 + 5x - 3 = 0.$

$x =$ _____ and $x =$ _____

23) $3x^2 - 4x + 9 = 0$

$x =$ _____ and $x =$ _____

24) A ball is thrown from the roof of a building. Its height changes over time and is given by the equation $h(t) = -16t^2 + 92t + 80$, where *t* is the time in seconds after it was thrown and *h* is the height in feet. Given the height reach by the ball after:

(a) 4 seconds

(b) 6 seconds

What does the constant (80) represent in this equation?