Advanced Algebra
Review #2
August 22-23, 2013

Name:_____ Per:_____ HW#_____

I. Completely factor the following polynomials. Some problems require two steps.

(a) $100 - 9x^2$	(b) $-20x^5 + 24x^2$	(c) $25x^8 - 49$	(d) $36x - 100x^3$

(e) $5x^4 - 75x^3 + 180x^2$	(f) $12x^2 - 23x + 10$	(g) $18x^3 - 24x^2 - 15x + 20$
(h) $10x^2 - 9x - 9$	(i) $20x^3 + 12x^2 + 35x + 21$	(j) $30x^3y^3 - 35x^2y^2 - 40xy^3$

II. Solve the quadratic equations by factoring (a) and using the Quadratic Formula (b).

$4x^2 - 17x - 15 = 0$	$x^2 + 12x + 33 = 0$
(a)	(b)

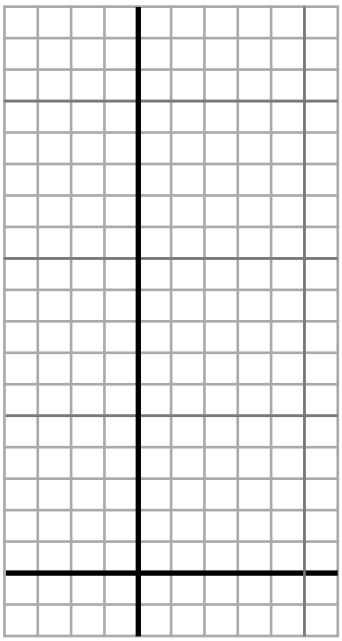
III. Simplify the following expressions using order of operations. Show all steps and work vertically.

$\frac{5^2\left(3^2-2^3\right)}{25}-\left(4\cdot 3-10\right)^2$	$3(-2x)^2 - 5(4x)^2$
(a)	(b)

IV. Graph the following quadratic function using the 5-point method.

$y = -x^2 + 2x + 15$ **vertex:** **x-intercepts:**

LOS: **y-intercept:** **ref. pt.:**



V. Solve the following absolute value equations.

(a) $\lvert x + 8\rvert = -14$	(b) $-2\lvert 4x - 3\rvert - 2 = -12$	(c) $\lvert x - 6\rvert = 10$

VI. Find the following linear functions. Express in slope-intercept form.

(a) Parallel to $-2x + y = -3$ and passing through (2, -4).	(b) Perpendicular to $y = -3x + 5$ and passing through (2, -4).	(c) Perpendicular to $4x + 6y = 18$ and passing through (8, -5).