

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).

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

(a) $4x^2 - 17x - 15 = 0$	(b) $x^2 + 12x + 33 = 0$	(a) $\frac{5^2(3^2 - 2^3)}{25} - (4 \cdot 3 - 10)^2$	(b) $3(-2x)^2 - 5(4x)^2$
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**IV.** Graph the following quadratic function using the 5-point method.

$$y = -x^2 + 2x + 15$$

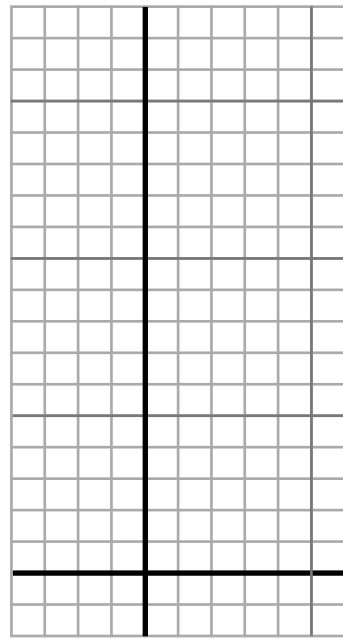
**vertex:**

**x-intercepts:**

**LOS:**

**y-intercept:**

**ref. pt.:**



**V.** Solve the following absolute value equations.

(a) $ x + 8  = -14$	(b) $-2 4x - 3  - 2 = -12$	(c) $ x - 6  = 10$
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**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 $(8, -5)$ .
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