ALGEBRA II REVIEW PROBLEMS
(Secs 5-2 thru 5-4)

1. Graph the following parabolas; state the vertex and axis of symmetry:

a. $y = 2x^2 + 8x - 3$ **b.** $y = -(x-2)^2 + 1$

2. Write the equation of a parabola with vertex (– 3, 6) and containing the point (1, – 2).

3. Factor the following:

a. $x^2 - 7x$ **b.** $x^2 + 2x - 8$

c. $x^2 + 6x + 9$ **d.** $4x^2 - 12x + 9$

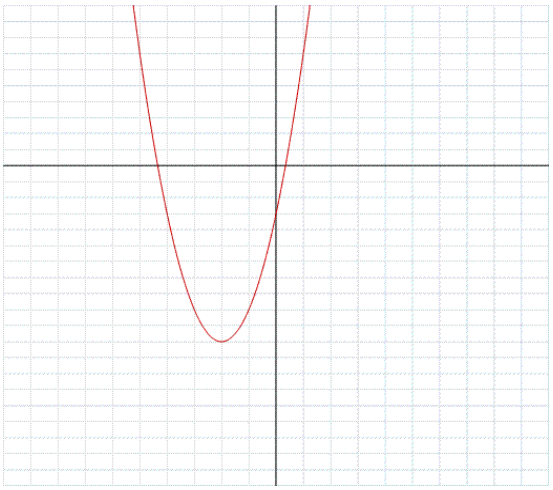
e. $x^2 - 9$ **f.** $4x^2 + 8x + 3$

g. $2x^2 + 9x - 5$ **h.** $7x^3 + 21x^2 + 8x + 24$

i. $12x^3 - 32x^2 + 6x - 16$

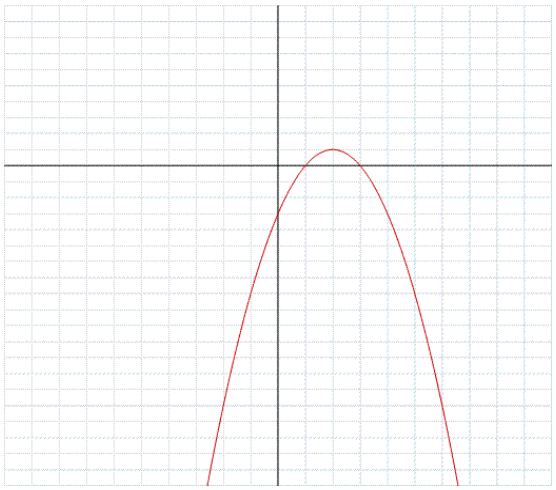
ANSWERS

1a.



Vertex (– 2 , – 11); Axis of symmetry: $x = -2$

1b.



Vertex (2, 1); Axis of symmetry: $x = 2$

2. $y = -\frac{1}{2}(x+3)^2 + 6$

3a. $x(x-7)$

3b. $(x-2)(x+4)$

3c. $(x+3)(x+3)$ *or* $(x+3)^2$

3d. $(2x-3)(2x-3)$ *or* $(2x-3)^2$

3e. $(x-3)(x+3)$

3f. $(2x+1)(2x+3)$

3g. $(2x-1)(x+5)$

3h. $(7x^2+8)(x+3)$

3i. $2(2x+1)(3x-8)$