EXTRA PRACTICE — Exercises

Unit IX – The Conic Sections
Part A – Parabolas - The Quadratic Function
Lesson 5 – Parabolas, $y = a(x-h)^2 + k$

Graph the solution set for each of the following second degree equations. In addition, identify the vertex and the axis of symmetry, and note whether the graph opens up or down.

1. $y = 3(x-4)^2 + 2$

2. $y = 3x^2 - 24x + 43$

3. $y = \dfrac{^-3}{2}(x+2)^2$

4. $y = x^2 - 4x + 7$

5. $y = {}^-4x^2 + 12x - 5$

Unit IX – The Conic Sections
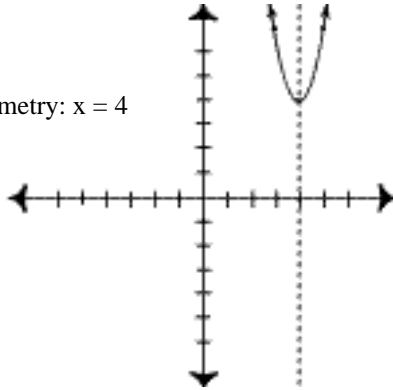Part A – Parabolas - The Quadratic Function
Lesson 5 – Parabolas, y = a(x-h)² + k

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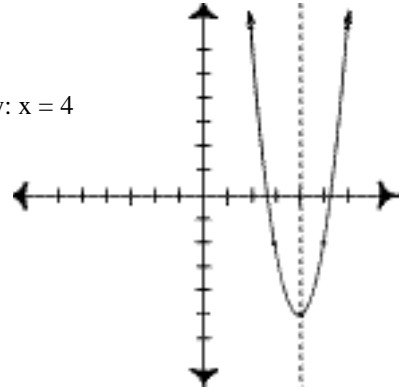
1. vertex: (4,4)

    Axis of Symmetry: x = 4

    Opens Up

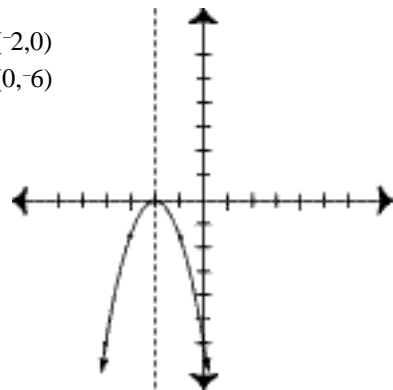2. vertex: (4,⁻5)

    Axis of Symmetry: x = 4

    Opens Up

3. vertex: (⁻2,0)

    Axis of Symmetry: x = ⁻2

    Opens Down - coefficient of x² is negative
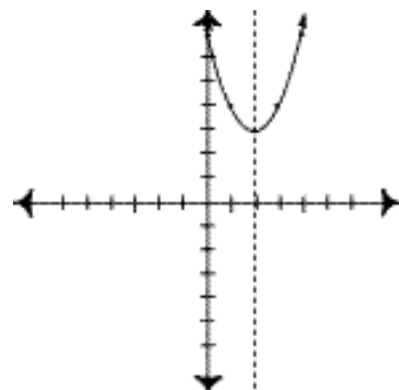
    x-intercept: (⁻2,0)

    y-intercept: (0,⁻6)

4. vertex: (2,3)

    Axis of Symmetry: x = 2

    Opens Up - coefficient of x² is positive

5. vertex: (1.5,4)

    Axis of Symmetry: $x = 1\frac{1}{2}$

    Opens Down - coefficient of x² is negative