

Use the given quadratic equation to answer the following questions in #1.

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

$a = -2$ $b = 4$ $c = 7$

Does the parabola open up or down? Why?

down ($a = -2$)

How does the width of the parabola compare to the parent function? Why?

narrow (2 is large so smaller width)

What is the vertex? $(1, 9)$

$$x = \frac{-b}{2a} = \frac{-4}{-4} = 1$$

$$y = -2(1)^2 + 4(1) + 7$$

$$y = -2 + 4 + 7 = 9$$

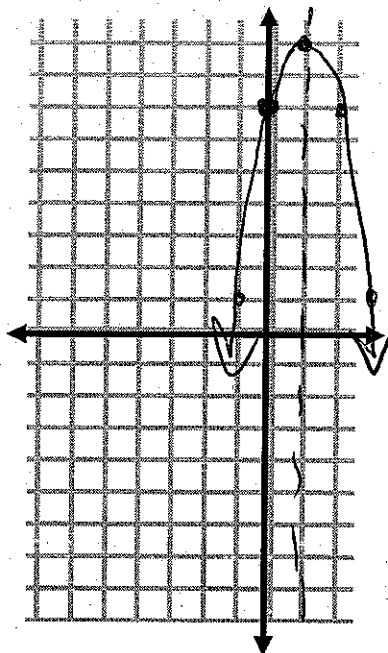
What is the axis of symmetry?

$x = 1$

What is the y-intercept? $(0, 7)$

y-int $(0, 7)$

x	y
0	7
1	9
2	7



Factor the following problems.

2. $x^2 + 11x + 24$

$(x+3)(x+8)$

3. $x^2 + x - 2$

$(x+2)(x-1)$

4. $x^2 - 5x - 14$

$(x-7)(x+2)$

5. $x^2 - 81 = 0$

$(x-9)(x+9) = 0$

$x = 9$ or $x = -9$

6. $x^2 + 10x + 25 = 0$

$(x+5)(x+5) = 0$

$x = -5$

Typo