

Quadratic Relations: Day 3 – Finding x-Intercepts and y-intercepts

1. Identify the zeros and axis of symmetry of each quadratic and find the y-intercept by expanding (use FOIL or The Grid Method). Then graph the parabola.

<p>a. $y = (x + 4)(x + 1)$</p> $\frac{-4-1}{2} = \frac{-5}{2} = -2.5$ $(-4)(-1) = 4$	<p>x-intercepts / zeros $-4, -1$ axis of symmetry $x = -2.5$ y-intercept $y = 4$</p>	<p>b. $y = (x + 2)(x + 3)$</p> $\frac{-2-3}{2} = \frac{-5}{2} = -2.5$ $(-2)(-3) = 6$	<p>x-intercepts / zeros $-2, -3$ axis of symmetry $x = -2.5$ y-intercept $y = 6$</p>
<p>c. $y = (x + 7)(x - 1)$</p> $\frac{-7+1}{2} = \frac{-6}{2} = -3$ $(-7)(1) = -7$	<p>x-intercepts / zeros $-7, 1$ axis of symmetry $x = -3$ y-intercept $y = -7$</p>	<p>d. $y = (x - 4)(x - 2)$</p> $\frac{4+2}{2} = \frac{6}{2} = 3$ $(4)(2) = 8$	<p>x-intercepts / zeros $4, 2$ axis of symmetry $x = 3$ y-intercept $y = 8$</p>

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

$$\frac{+3-3}{2} = \frac{0}{2} = 0$$

$$(+3)(-3) = -9$$

x-intercepts / zeros

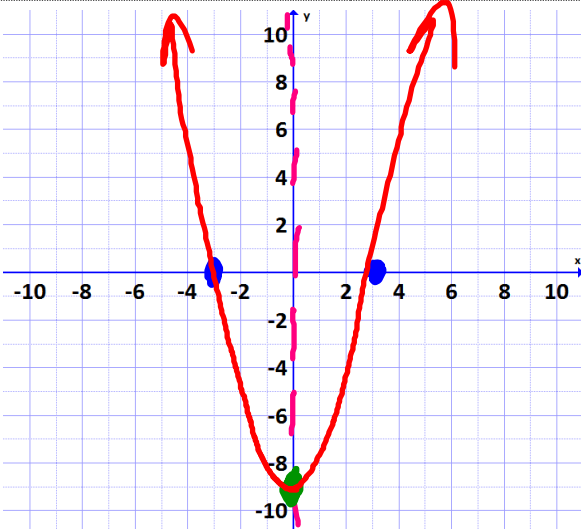
$$+3, -3$$

axis of symmetry

$$x = 0$$

y-intercept

$$y = -9$$



f. $y = (x + 2)(x - 2)$

$$\frac{-2+2}{2} = \frac{0}{2} = 0$$

$$(-2)(+2) = -4$$

x-intercepts / zeros

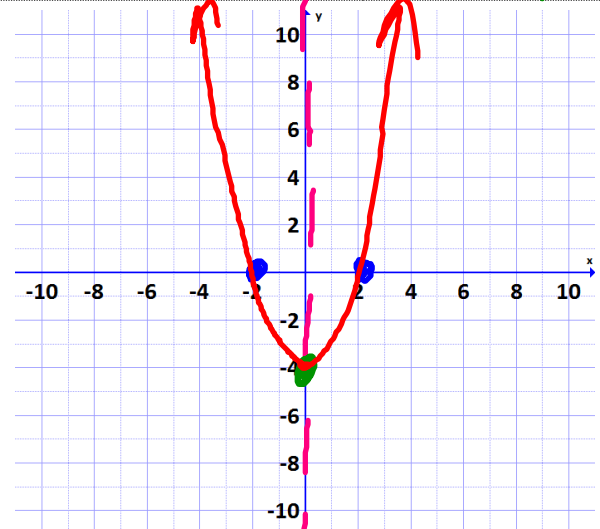
$$-2, +2$$

axis of symmetry

$$x = 0$$

y-intercept

$$y = -4$$



g. $y = (x - 2)(x - 2)$

$$\frac{+2+2}{2} = \frac{4}{2} = 2$$

$$(+2)(+2) = 4$$

x-intercepts / zeros

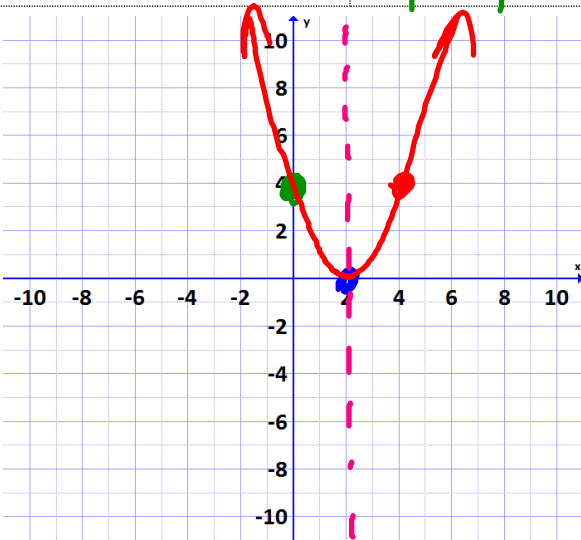
$$+2, +2$$

axis of symmetry

$$x = 2$$

y-intercept

$$y = 4$$



h. $y = (x + 1)(x + 1)$

$$\frac{-1-1}{2} = \frac{-2}{2} = -1$$

$$(-1)(-1) = 1$$

x-intercepts / zeros

$$-1, -1$$

axis of symmetry

$$x = -1$$

y-intercept

$$y = 1$$

