

✚ homework check: FM10 p. 309

✚ note: Representing Quadratics

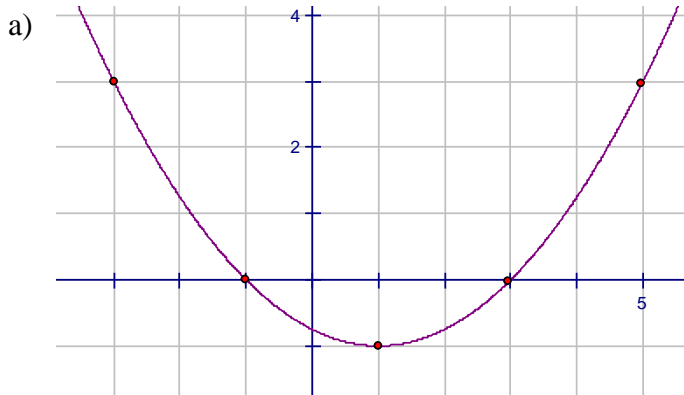
Quadratics can be represented in several different ways: by table of values, by graphs, and by equations. Equations of quadratics can have several different forms. The x-intercepts can also have different names: roots, solutions, or zeroes.

Standard Form – attained by simplifying using FOIL  $y = ax^2 + bx + c$

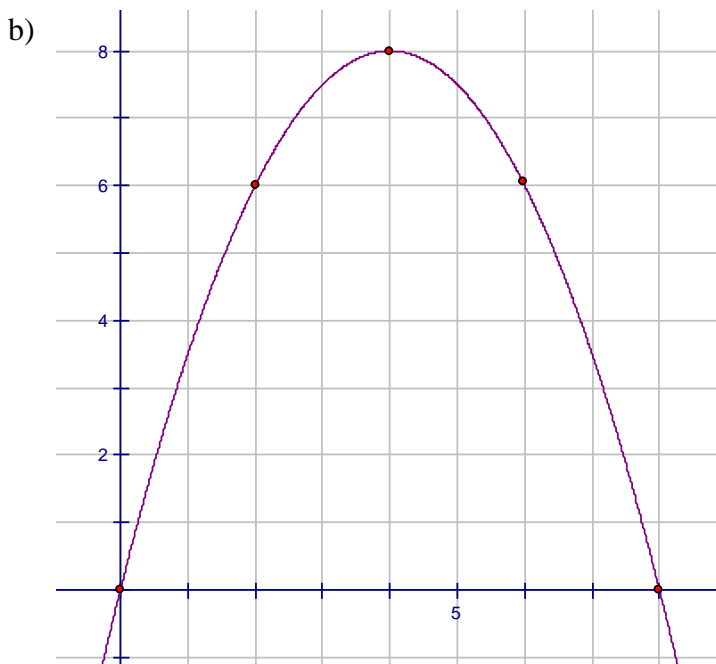
Intercept Form – attained by factoring  $y = a(x - r)(x - s)$

Vertex Form – attained by completing the square (grade 11)  $y = a(x - g)^2 + h$

The ability to find the x-intercepts can help answer questions about a relationship. Identify the x-intercepts for each of the following.



x-intercepts are at  $x = -1$  and  $x = 3$



x – intercepts are at  $x = 0$  and  $x = 8$

$$c) y = 2(x+3)(x-2)$$

$$x+3=0$$

$$x=-3$$

$$x-2=0$$

$$x=2$$

$$d) y = x(x+7)$$

$$x=0$$

$$x+7=0$$

$$x=-7$$

$$e) y = x^2 - 3x - 10$$

$$ac = -10$$

$$b = -3$$

$$y = (x+2)(x-5)$$

$$x+2=0$$

$$x=-2$$

$$x-5=0$$

$$x=5$$

$$f) y = -2x^2 - 6x$$

$$y = -2x(x+3)$$

$$-2x=0$$

$$x=0$$

$$x+3=0$$

$$x=-3$$

$$g) y = 2x^2 - 4x - 30$$

$$y = 2(x^2 - 2x - 15)$$

$$ac = -15$$

$$b = -2$$

$$y = 2(x+3)(x-5)$$

$$x+3=0$$

$$x=-3$$

$$x-5=0$$

$$x=5$$

✚ **homework assignment: Lesson 6 - 10**

MFM 2P

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**Lesson 6 – 10: Representing Quadratics**

Level	Work to be Completed
1	# 1- 3
2	# 2- 4
3	# 3- 5
4	# 4- 6

*Marking Scheme:*

*Level R: 0 - 49%*

*Level 1: 50 – 59%*

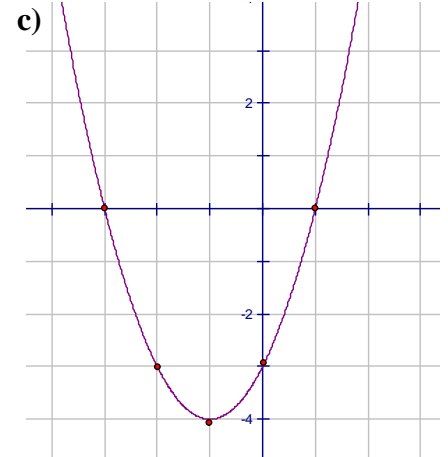
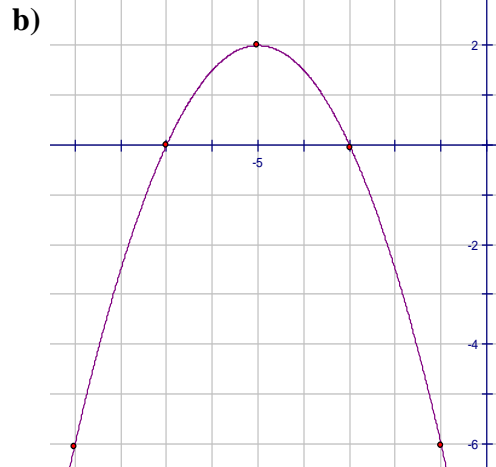
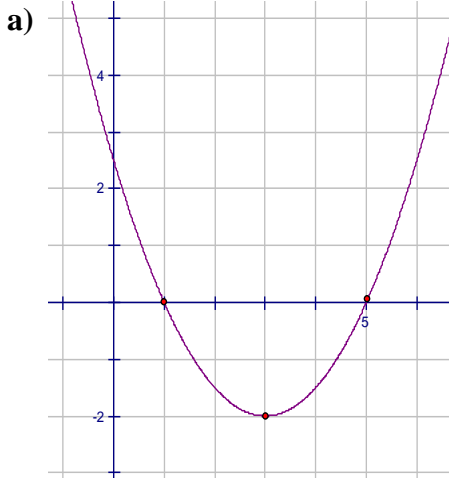
*Level 2: 60 – 69%*

*Level 3: 70 – 79%*

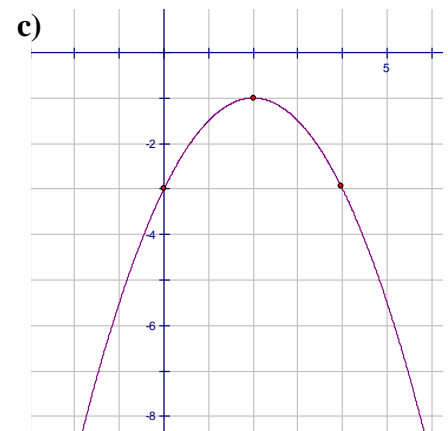
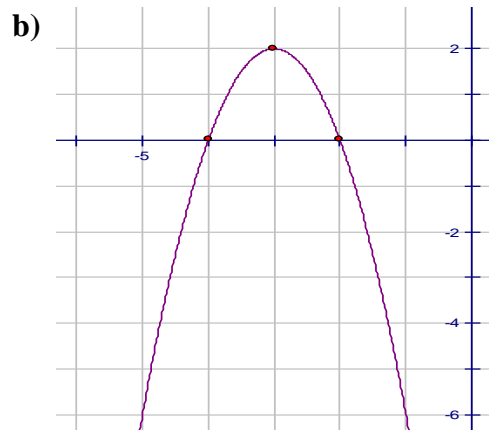
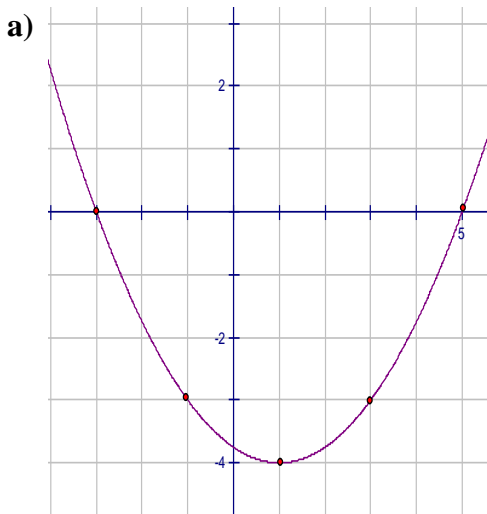
*Level 4: 80 – 100%*

Show all work below to achieve the level you have chosen.

**1. Label the coordinates of the x-intercepts for each quadratic relation.**



**2. Label the coordinates of the zeroes of each relation.**



**3. Find the zeroes of each quadratic relation.**

a)  $y = (x-5)(x+3)$

b)  $y = (x-4)(x-1)$

c)  $y = 5(x-9)(x+9)$

d)  $y = -2(x-7)(x+3)$

e)  $y = \frac{-1}{2}(x+1)(x+4)$

f)  $y = -3x(x-3)$

g)  $y = x(x+2)$

h)  $2x(x+5)$

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**4. Find the zeroes by factoring.**

**a)**  $y = x^2 + 10x + 16$

**b)**  $y = x^2 - 2x - 35$

**c)**  $y = x^2 - 6x - 7$

**d)**  $y = 5x^2 - 125$

**e)**  $y = 3x^2 + 39x + 108$

**f)**  $y = x^2 - 81$

**g)**  $y = 2x^2 - 28x + 98$

**h)**  $y = 4x^2 - 100$

**5. Find the x-intercepts for each quadratic relation.**

**a)**  $y = 4x^2 - 16x$

**b)**  $y = 5x^2 - 125x$

**c)**  $y = -x^2 - 18x - 81$

**d)**  $y = -3.9x^2 + 19.5x$

**6. Expand and simplify, then factor to find the zeroes.**

**a)**  $y = (x+5)^2 - 4$

**b)**  $y = (x-3)^2 - 36$

**c)**  $y = 3(x-15)^2 + 2$

**d)**  $y = -5(x+2)^2 + 9$