Algebra 2

Topic 4 // Graphing Quadratics A

N: Key

D:

P: 1 2 3 4 5 6

Standards: 10.0

Holt: 5-3 Graphing and Factoring p. 333

1) Answer the following questions for this quadratic: a=1 b=4 c=-5

$$y = x^2 + 4x - 5$$

a) Does it open up or down? a=1 up

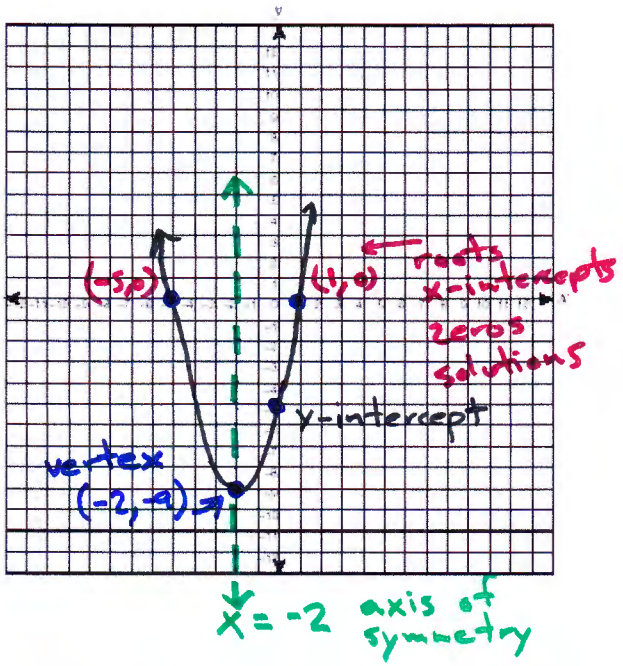
b) Vertex (-2,-9)

c) Y-Intercept (0,-5)

d) X-Intercepts (or Roots or Zeroes) x=-5, x=1

e) Axis of Symmetry x=-2

f) Graph



(b) $x = \frac{-b}{2a} = \frac{-4}{2(1)} = \frac{-4}{2} = -2$ → (-2,-9)

$y = (-2)^2 + 4(-2) - 5$

$= 4 - 8 - 5 = -9$

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

$(x+5)(x-1) = 0$

$x+5=0$ $\quad x-1=0$

$-5 \quad -5 \quad +1 \quad +1$

$x = -5$ $\quad x = 1$

2) Answer the following questions for this quadratic: a=1 b=-2 c=-3

$$y = x^2 - 2x - 3$$

a) Does it open up or down? up

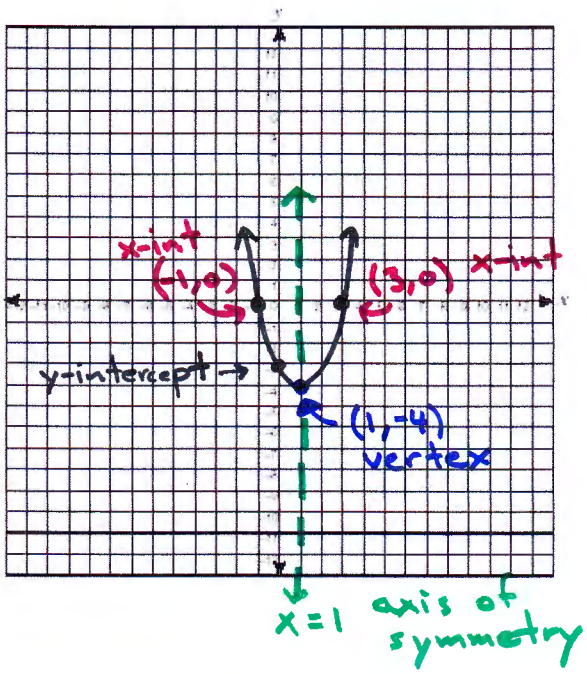
b) Vertex (1,-4)

c) Y-Intercept (0,-3)

d) X-Intercepts (or Roots or Zeroes) x=3 ; x=-1

e) Axis of Symmetry x=1

f) Graph



(b) $x = \frac{-b}{2a} = \frac{-(-2)}{2(1)} = \frac{2}{2} = 1$ → (1,-4)

$y = (1)^2 - 2(1) - 3$

$= 1 - 2 - 3 = -4$

(d) $y = x^2 - 2x - 3$

$(x-3)(x+1) = 0$

$x-3=0$ $\quad x+1=0$

$+3 \quad +3 \quad -1 \quad -1$

$x = 3$ $\quad x = -1$

3) Answer the following questions for this quadratic: → a=1 b=-4 c=-5

$$y = x^2 - 4x - 5$$

a) Does it open up or down? up ∪

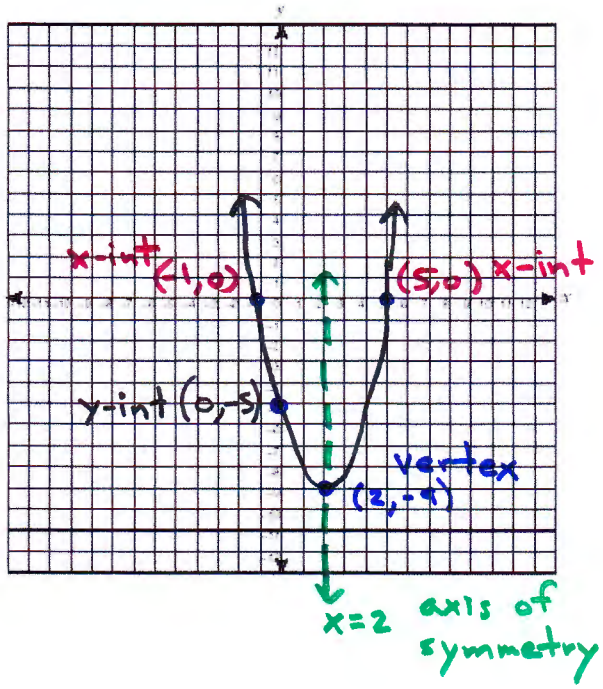
b) Vertex (2,-9)

c) Y-Intercept (0,-5)

d) X-Intercepts (or Roots or Zeroes) x = 5 , x = -1

e) Axis of Symmetry x = 2

f) Graph



(b) $x = \frac{-b}{2a} = \frac{-(-4)}{2(1)} = \frac{4}{2} = 2$ → (2,-9)

$y = (2)^2 - 4(2) - 5$

$= 4 - 8 - 5 = -9$ → (2,-9)

(d) $y = x^2 - 4x - 5$

1 × -5, 1 × +1

$(x-5)(x+1) = 0$

$x - 5 = 0$ → $+5 \; +5$ → $x = 5$

$x + 1 = 0$ → $-1 \; -1$ → $x = -1$

4) Answer the following questions for this quadratic: → a=1 b=4 c=3

$$y = x^2 + 4x + 3$$

a) Does it open up or down? up ∪

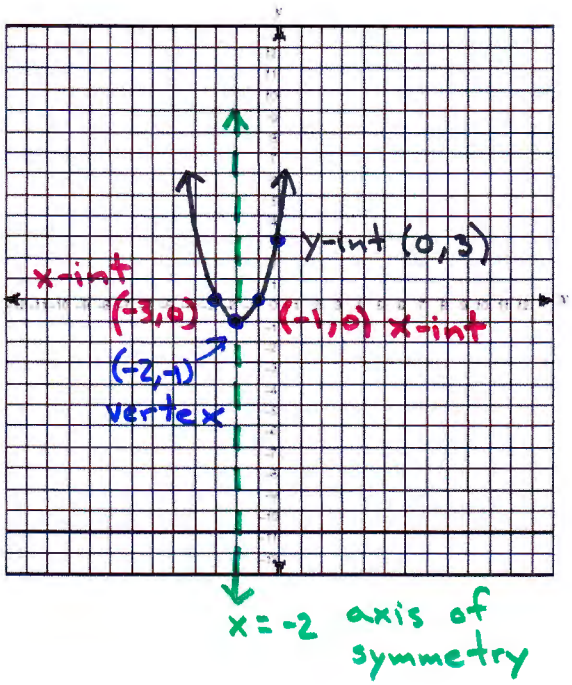
b) Vertex (-2,-1)

c) Y-Intercept (0,3)

d) X-Intercepts (or Roots or Zeroes) x = -3 , x = -1

e) Axis of Symmetry x = -2

f) Graph



(b) $x = \frac{-b}{2a} = \frac{-4}{2(1)} = \frac{-4}{2} = -2$ → (-2,-1)

$y = (-2)^2 + 4(-2) + 3$

$= 4 - 8 + 3 = -1$ → (-2,-1)

(d) $y = x^2 + 4x + 3$

1 × 3, 1 × 1

$(x+3)(x+1) = 0$

$x + 3 = 0$ → $-3 \; -3$ → $x = -3$

$x + 1 = 0$ → $-1 \; -1$ → $x = -1$