PRACTICE QUESTIONS: Standard Form Continued... Name: Solutions

Complete all the information for each quadratic equation in Standard Form.

1. $y = 4x^2 + 24x - 28$

a) y-intercept $y = -28$ ∴ y-int is 28

b) zeros $y = 4(x^2 + 6x - 7)$

$0 = 4(x+7)(x-1)$

$x = -7$ $x = 1$ ∴ x-int are -7 and 1.

c) axis of symmetry $\frac{-7+1}{2} = \frac{-6}{2} = -3$ ∴ $x = -3$

d) vertex

Let $x = -3$

$y = 4(-3)^2 + 24(-3) - 28$

$y = 4(9) - 72 - 28$

$y = -64$ ∴ vertex $(-3, -64)$

e) direction of opening up

f) max/min value min value = -64.

2. $y = -2x^2 + 162$

a) y-intercept y-int = 162

b) zeros $y = -2x^2 + 162$

$y = -2(x^2 - 81)$

$y = -2(x+9)(x-9)$ ∴ x-int are -9 and 9

$x = -9$ $x = 9$

c) axis of symmetry $\frac{-9+9}{2} = \frac{0}{2} = 0$ ∴ axis of symm. is 0.

d) vertex Let $x = 0$

$y = -2(0)^2 + 162$

$y = 162$

∴ vertex is $(0, 162)$

e) direction of opening down

f) max/min value max value is 162.

PRACTICE QUESTIONS: Standard Form Continued... Name: Solutions.

Complete the following information and **GRAPH** each equation.

3. $y = x^2 - 8x + 7$

a) y-intercept = 7

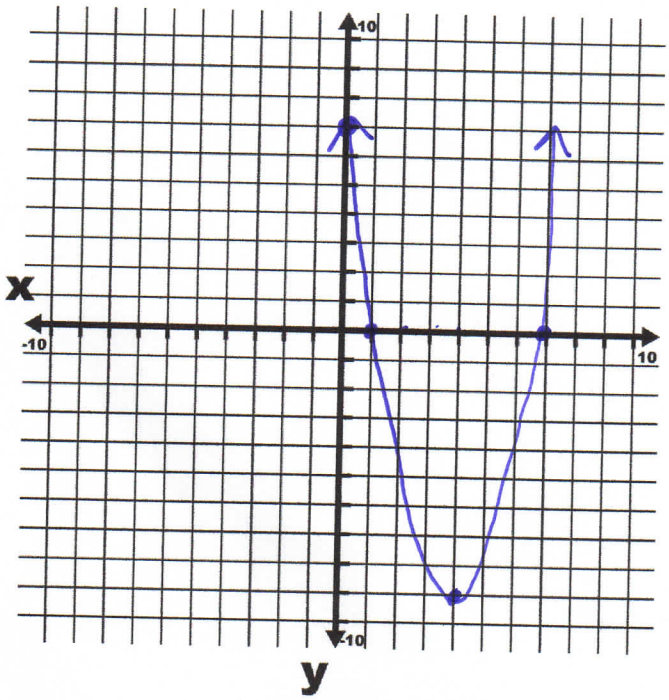
b) zeros $y = (x-7)(x-1)$
$0 = (x-7)(x-1)$
$x = 7$ $x = 1$

c) axis of symmetry $\frac{7+1}{2} = \frac{8}{2} = 4$

d) vertex let $x = 4$
$y = (4)^2 - 8(4) + 7$
$y = 16 - 32 + 7$
$y = -9$
∴ vertex is $(4, -9)$

e) direction of opening up

f) Max/min value min value $= -9$



4. $y = x^2 + 5x + 6$ * change question *

a) y-intercept = 6

b) zeros $0 = (x+2)(x+3)$
$x = -2$ $x = -3$

c) axis of symmetry $\frac{-2-3}{2} = \frac{-5}{2} = -2.5$

d) vertex $y = (-2.5)^2 + 5(-2.5) + 6$
$y = 6.25 - 12.5 + 6$
$y = -0.25$
∴ vertex is $(-2.5, -0.25)$

e) direction of opening up

f) max/min value min value is -0.25.