Math 41
Quiz 3 A
February 19, 2016

name Kent C. Straight

1. Identify the vertex; find all x- and y-intercepts, if any.

$$f(x) = 2(x-1)^2 - 18$$

vertex: $(1, -18)$

y-intercept: $f(0) = 2(0-1)^2 - 18$
$= 2 - 18 = -16$
$(0, -16)$

x-intercept(s):

$f(x) = 0$
$2(x-1)^2 - 18 = 0$
$2(x-1)^2 = 18$
$(x-1)^2 = 9$
$x - 1 = \pm 3 \rightarrow x = 1 \pm 3 = 4, -2$

2. Write the quadratic function in standard form.

$$f(x) = -2x^2 + 4x + 5$$

$f(x) = -2(x^2 - 2x) + 5$
$f(x) = -2(x^2 - 2x + (-1)) + 5$
$f(x) = -2(x^2 - 2x + 1) + 2 + 5$
$f(x) = -2(x-1)^2 + 7$

Math 41
Quiz 3 B
February 19, 2016

name Kent C. Straight

1. Identify the vertex; find all x- and y-intercepts, if any.

$$f(x) = 3(x-1)^2 - 12$$

vertex: $(1, -12)$

y-intercept: $f(0) = 3(0-1)^2 - 12$

$= 3 - 12 = -9$

$(0, -9)$

x-intercept(s):

$f(x) = 0$

$3(x-1)^2 - 12 = 0$

$3(x-1)^2 = 12$

$(x-1)^2 = 4$

$x - 1 = \pm 2 \longrightarrow x = 1 \pm 2 = 3, -1$

2. Write the quadratic function in standard form.

$$f(x) = -2x^2 + 8x - 5$$

$f(x) = -2(x^2 - 4x) - 5$

$f(x) = -2(\underbrace{x^2 - 4x + 4} - 4) - 5$

$f(x) = -2(x^2 - 4x + 4) + 8 - 5$

$f(x) = -2(x-2)^2 + 3$