

#15.

$$y = x^2 + 8x + 16 - 5$$

$$y = x^2 + 8x + 11$$

$$\text{vertex } (-4, -5)$$

$$y\text{-int.} : (0, 11)$$

18.

$$f(x) = x^2 + 6x + 9 - 1$$

$$f(x) = x^2 + 6x + 8$$

$$\text{vertex} = (-3, -1)$$

$$y\text{-int.} : (0, 8)$$

$$\#19. (x-5)(x+1)$$

$$x\text{-intercept } (5, 0) (-1, 0)$$

$$y\text{-int } (0, -5)$$

$$\#21 f(x) = (x+4)(x-2)$$

$$x\text{-int. } (-4, 0) (2, 0)$$

$$y\text{-int } (0, -8)$$

$$\#28 d^2 + 10d + 25 + 0 - 25$$

$$y = (d+5)^2 - 25$$

$$\text{vertex } (-5, -25)$$

32

$$x^2 + 10x + 25 + 9 - 5$$

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

$$\text{vertex} : (-5, 4)$$

$$\#34 x^2 + 12x + 36 + 27 - 36$$

$$y = (x+6)^2 - 9$$

$$\text{vertex } (-6, -9)$$

$$\#48 (x+1)(x-5) = f(x)$$

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

$$\#60 y = (x-2)^2 + 2 \checkmark$$

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

$$y = x^2 - 4x + 6 \checkmark$$

$$\#49 (x+1)(x-1) = f(x)$$

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

70

$$f(x) = (x+1)^2 + 4$$

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

$$\#68 (x-3)(x-5) = f(x)$$

$$\checkmark f(x) = x^2 - 8x + 15$$

$$x^2 - 8x + 16 + 15 - 16$$

$$\checkmark f(x) = (x-4)^2 - 1$$

$$\#77 y = x^2 + 8x + 15$$

$$f(x) = (x+4)^2 - 1 \checkmark$$

$$\text{vertex} : (-4, -1) \quad y\text{-int. } (0, 15)$$

$$\#80 \text{ vertex } (3, -16) \checkmark$$

$$x^2 - 6x + 9 - 7 - 9 \quad y\text{-int.} : (0, -7) \checkmark$$

$$(x-3)^2 - 16$$

$$x\text{-int.} : (7, 0) (-1, 0) \checkmark$$

$$(x-7)(x+1)$$