

12 pts + 3 pts context = 15 pts total

11. $f(x) = 0$

$$x^2 - 9x = 0$$

$$x(x-9) = 0$$

$$x = 0 \text{ or } x - 9 = 0$$

$$x = 9$$

The zeros of $f(x) = x^2 - 9x$ are 0 and 9. The x-intercepts of the graph of f are 0 and 9.

#s 11-24 : Find zeros of each quadratic function by factoring. What are the x-intercepts of the graph of the function.

YOUR TEACHER LIKES TO SEE ORDERED PAIRS.

14. $G(x) = 0$

$$x^2 - 9 = 0$$

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

$$x+3 = 0 \text{ or } x-3 = 0$$

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

The zeros of $G(x) = x^2 - 9$ are -3 and 3. The x-intercepts of the graph of G are -3 and 3.

I WANT TO SEE $(-3, 0)$ & $(3, 0)$
OR $(\pm 3, 0)$

→ 1 pt

17. $g(x) = 0$

$$2x^2 - 5x - 3 = 0$$

$$(2x+1)(x-3) = 0$$

$$2x+1 = 0 \text{ or } x-3 = 0$$

$$x = -\frac{1}{2} \quad x = 3$$

The zeros of $g(x) = 2x^2 - 5x - 3$ are $-\frac{1}{2}$ and 3.

The x-intercepts of the graph of g are $-\frac{1}{2}$ and 3.

I WANT TO SEE $(-\frac{1}{2}, 0)$ & $(3, 0)$

27. $g(x) = 0$

$$(x-1)^2 - 4 = 0$$

$$(x-1)^2 = 4$$

$$x-1 = \pm\sqrt{4}$$

$$x-1 = \pm 2$$

$$x-1 = 2 \text{ or } x-1 = -2$$

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

The zeros of $g(x) = (x-1)^2 - 4$ are -1 and 3.

The x-intercepts of the graph of g are -1 and 3.

I want to see $(-1, 0)$ & $(3, 0)$

→ 2 pts

#s 31-36 Find zeros by completing the square. What are the x-intercepts?

31. $f(x) = 0$

$$x^2 + 4x - 21 = 0$$

$$x^2 + 4x = 21$$

$$x^2 + 4x + 4 = 21 + 4$$

$$(x+2)^2 = 25$$

$$x+2 = \pm\sqrt{25}$$

$$x+2 = \pm 5$$

$$x = -2 \pm 5$$

$$x = 3 \text{ or } x = -7$$

The zeros of $f(x) = x^2 + 4x - 21$ are -7 and 3.

The x-intercepts of the graph of f are -7 and 3.

I WANT TO SEE $(-7, 0)$ & $(3, 0)$

→ 2 pts

35. $F(x) = 0$

$$3x^2 + x - \frac{1}{2} = 0$$

$$x^2 + \frac{1}{3}x - \frac{1}{6} = 0$$

$$x^2 + \frac{1}{3}x = \frac{1}{6}$$

$$x^2 + \frac{1}{3}x + \frac{1}{36} = \frac{1}{6} + \frac{1}{36}$$

$$\left(x + \frac{1}{6}\right)^2 = \frac{7}{36}$$

$$x + \frac{1}{6} = \pm \sqrt{\frac{7}{36}} = \pm \frac{\sqrt{7}}{6}$$

$$x = \frac{-1 \pm \sqrt{7}}{6}$$

→ 2 pts

The zeros of $F(x) = 3x^2 + x - \frac{1}{2}$ are $\frac{-1-\sqrt{7}}{6}$ and

$\frac{-1+\sqrt{7}}{6}$. The x-intercepts of the graph of F are

$\frac{-1-\sqrt{7}}{6}$ and $\frac{-1+\sqrt{7}}{6}$.

I WANT TO SEE

$\left(\frac{-1-\sqrt{7}}{6}, 0\right)$ & $\left(\frac{-1+\sqrt{7}}{6}, 0\right)$

OR $\left(\frac{-1 \pm \sqrt{7}}{6}, 0\right)$.

→ 1 pt