

Name: _____
period: _____

Warm-up: April 11, 2012

SHOW YOUR WORK as demonstrated in class notes

Solve each equation using the given method

Factoring

1. $x^2 - 2x - 15 = 0$

Factoring

2. $x^2 - 9x + 14 = 0$

Square Roots

3. $(x+2)^2 - 12 = 0$

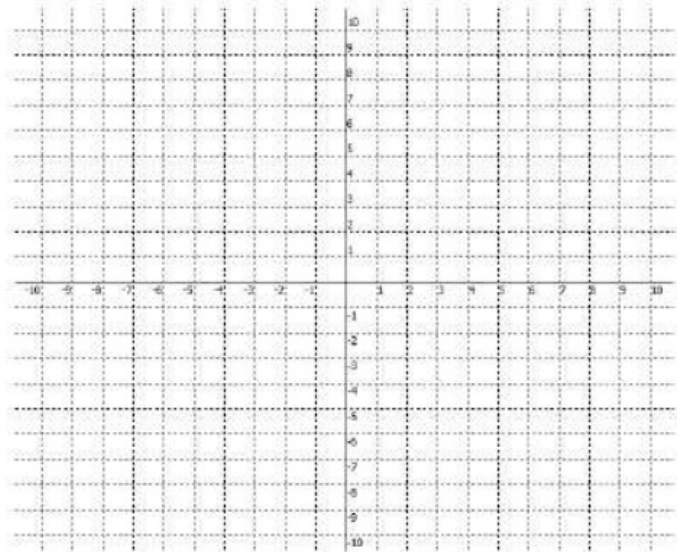
4. Given: $g(x) = x^2 + 2x - 3$

a) Roots:

b) Vertex:

c) y-intercept:

d) graph



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Solve each equation using the given method

Factoring

1. $x^2 - 2x - 15 = 0$ m: -15
r: -2, 3

$$(x+3)(x-5) = 0$$

$$x+3=0 \quad x-5=0$$

$$x = -3 \quad x = 5$$

Factoring

2. $x^2 - 9x + 14 = 0$ m: 14
r: -9, -2

$$(x-7)(x-2) = 0$$

$$x-7=0 \quad x-2=0$$

$$x = 7, 2$$

Square Roots

3. $(x+2)^2 - 12 = 0$
+12 +12

$$\sqrt{(x+2)^2} = \sqrt{12}$$

$$x+2 = \pm 2\sqrt{3}$$

$$x = \pm 2\sqrt{3} - 2$$

$$x = -2 \pm \sqrt{3}$$

4. Given: $g(x) = x^2 + 2x - 3$

a) Roots:

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

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

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

$$x = 1, -3$$

b) Vertex:

$$g(x) = x^2 + 2x - 3 \quad \left(\frac{2}{2}\right)^2 = 1$$

$$g(x) = x^2 + 2x + \underline{1} - 3 - \underline{1}$$

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

$$(-1, -4)$$

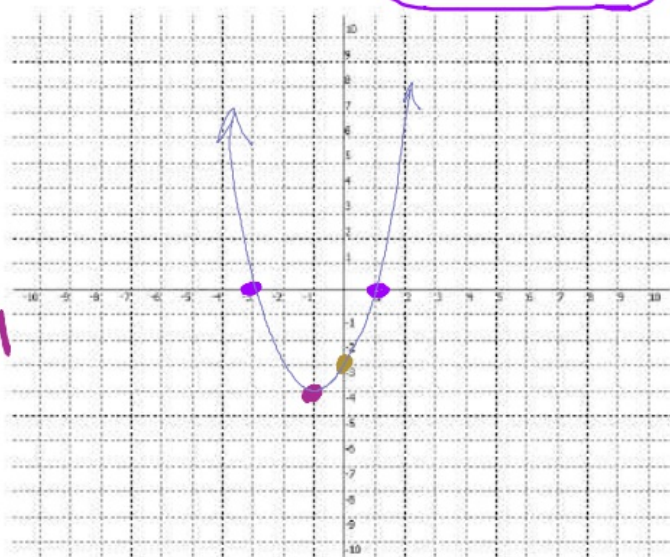
c) y-intercept:

$$(0, -3)$$

$$g(0) = (0)^2 + 2(0) - 3$$

$$g(0) = -3$$

d) graph



Simplify

Notes

$$\begin{aligned} 1) & 3\sqrt{20a} \cdot \sqrt{8a^3} \\ &= 3\sqrt{5 \cdot 2 \cdot 2 \cdot 2 \cdot a \cdot a \cdot a \cdot a} \\ &= 12a^2\sqrt{10} \end{aligned}$$

$$\begin{aligned} 2) & 5\sqrt{45} + 3\sqrt{5} \\ &= 5\sqrt{3 \cdot 3 \cdot 5} + 3\sqrt{5} \\ &= 15\sqrt{5} + 3\sqrt{5} \\ &= 18\sqrt{5} \end{aligned}$$

$$\begin{aligned} & \begin{array}{c} \sqrt{3} \cdot \sqrt{3} \\ \sqrt{3 \cdot 3} \\ 3 \end{array} \\ 3) & \sqrt{3}(2\sqrt{3} + 5) \\ &= 2 \cdot 3 + 5\sqrt{3} \\ &= 6 + 5\sqrt{3} \end{aligned}$$

$$\begin{array}{c} \sqrt{7} \cdot \sqrt{7} \\ 7 \end{array}$$

$$\begin{array}{c} \sqrt{3} \cdot 2\sqrt{3} \\ 2\sqrt{3} \cdot \sqrt{3} \\ 2 \cdot 3 \end{array}$$

Simplify

$$\begin{aligned} 4) \frac{2\sqrt{18}}{\sqrt{2}} &= \frac{2\sqrt{3 \cdot 3 \cdot 2}}{\sqrt{2}} \\ &= \frac{2\sqrt{3 \cdot 3} \sqrt{2}}{\sqrt{2}} \\ &= 6 \end{aligned} \qquad \begin{aligned} &\frac{2\sqrt{18}}{\sqrt{2}} \left(\frac{\sqrt{2}}{\sqrt{2}} \right) \\ &= \frac{2\sqrt{3 \cdot 3 \cdot 2 \cdot 2}}{2} \\ &= \frac{12}{2} \\ &= 6 \end{aligned} \qquad \begin{aligned} &\frac{2\sqrt{18}}{\sqrt{2}} \\ &= \frac{2\sqrt{2 \cdot 3 \cdot 3}}{\sqrt{2}} \\ &= \frac{6\sqrt{2}}{\sqrt{2}} \left(\frac{\sqrt{2}}{\sqrt{2}} \right) \\ &= \frac{12}{2} \\ &= 6 \end{aligned}$$

Solve

$$\begin{aligned} 5) \quad 12 &= 7 + \sqrt{2x-3} \\ -7 \quad -7 \\ \hline (5)^2 &= (\sqrt{2x-3})^2 \end{aligned}$$

$$25 = 2x - 3$$

$$28 = 2x$$

$$14 = x$$