

HW: Worksheet/Written: 1-18

Warm up:

Solve.

1)  $p^2 - 12p + 3 = 0$

$$\frac{12 \pm \sqrt{144 - 4(1)(3)}}{2}$$

$$\frac{12 \pm \sqrt{144 - 12}}{2} = \frac{12 \pm \sqrt{132}}{2}$$

$$\frac{12 \pm 2\sqrt{33}}{2} = \boxed{6 \pm \sqrt{33}}$$

2)  $r^2 + 9r + 8 = 0$

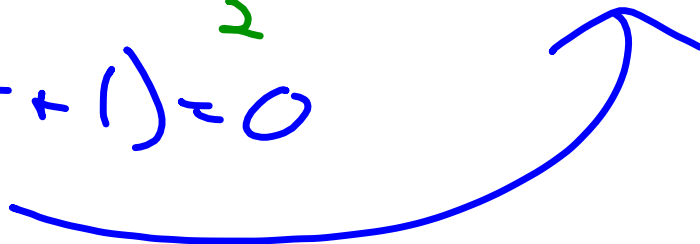
$$\frac{-9 \pm \sqrt{81 - 4(1)(8)}}{2}$$

$$\frac{-9 \pm 7}{2}$$

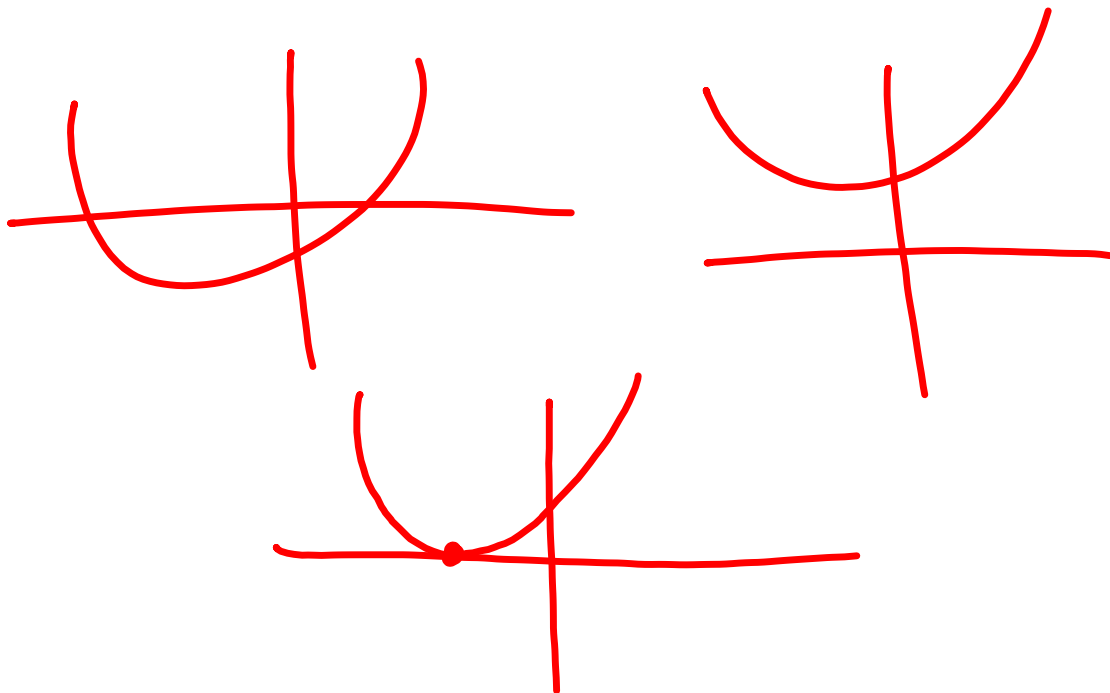
$$\boxed{-1, -8}$$

$$\frac{-9 \pm \sqrt{81 - 32}}{2} = \frac{-9 \pm \sqrt{49}}{2}$$

$$(r + 8)(r + 1) = 0$$



## HW Solutions



$$\textcircled{18} \quad y = 4x^2 + 2x - 1$$

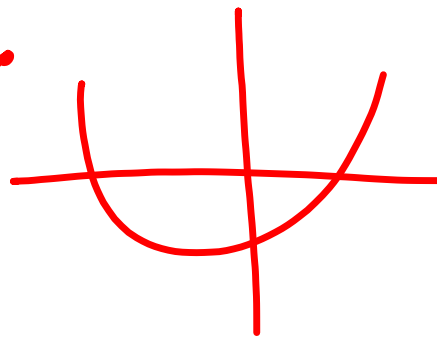
$$4 - 4(4)(-1)$$

$$4 + 16$$

$$20$$

2 x-intercepts

below



$$\textcircled{15} \quad y = x^2 + 16 - 8x$$
$$y = x^2 - 8x + 16$$

$$64 - 4(1)(16)$$

$$64 - 64$$

0

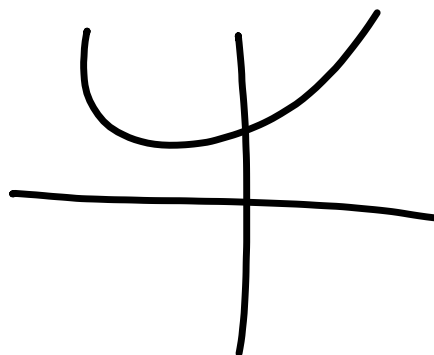
1 x-intercept  
0A

$$\textcircled{16} \quad y = 2x^2 + 4x + 3$$

$$16 - 4(2)(3)$$

$$16 - 24$$

$$-8$$



$\textcircled{0}$  x-ints  
above

$$\textcircled{11} \quad 2c^2 - 1.4c + 0.1 = 0$$

## Methods for Solving a Quadratic Equation

Quadratic Formula	Equation in the form $ax^2 + bx + c = 0$
Factoring	Equation in the form $ax^2 + bx = 0$ or if factors are easily seen
Inverse Operations	Equation in the form $ax^2 + c = 0$
Completing the Square	Equation in the form $x^2 + bx + c = 0$ and $b$ is an even number.

$$12x^2 - 108 = 0$$

$$+ 108 \quad + 108$$

$$\frac{12x^2}{12} = \frac{108}{12}$$

$$\sqrt{x^2} = \sqrt{9}$$

$$x = \pm 3$$



$$\frac{4t^2 - 56t}{4} = \frac{0}{4}$$

$$t^2 - 14t = 0$$

$$t(t - 14) = 0$$

$$t = 0, 14$$

$$t = 0$$

$$\begin{array}{r} t - 14 = 0 \\ +14 \quad +14 \\ \hline t = 14 \end{array}$$

$$4x^2 - 12x + 7 = 0$$

$$\frac{12 \pm \sqrt{144 - 4(4)(7)}}{8}$$

$$\frac{12 \pm \sqrt{144 - 112}}{8}$$

$$\frac{12 \pm \sqrt{32}}{8} = \frac{12 \pm 4\sqrt{2}}{8} = \frac{3 \pm \sqrt{2}}{2}$$

$$n^2 + 8n - 2 = 0$$

$$\frac{-8 \pm \sqrt{64 - 4(1)(-2)}}{2}$$

$$\frac{-8 \pm \sqrt{64+8}}{2}$$

$$\frac{-8 \pm \sqrt{72}}{2} = \frac{-8 \pm 6\sqrt{2}}{2} = -4 \pm 3\sqrt{2}$$

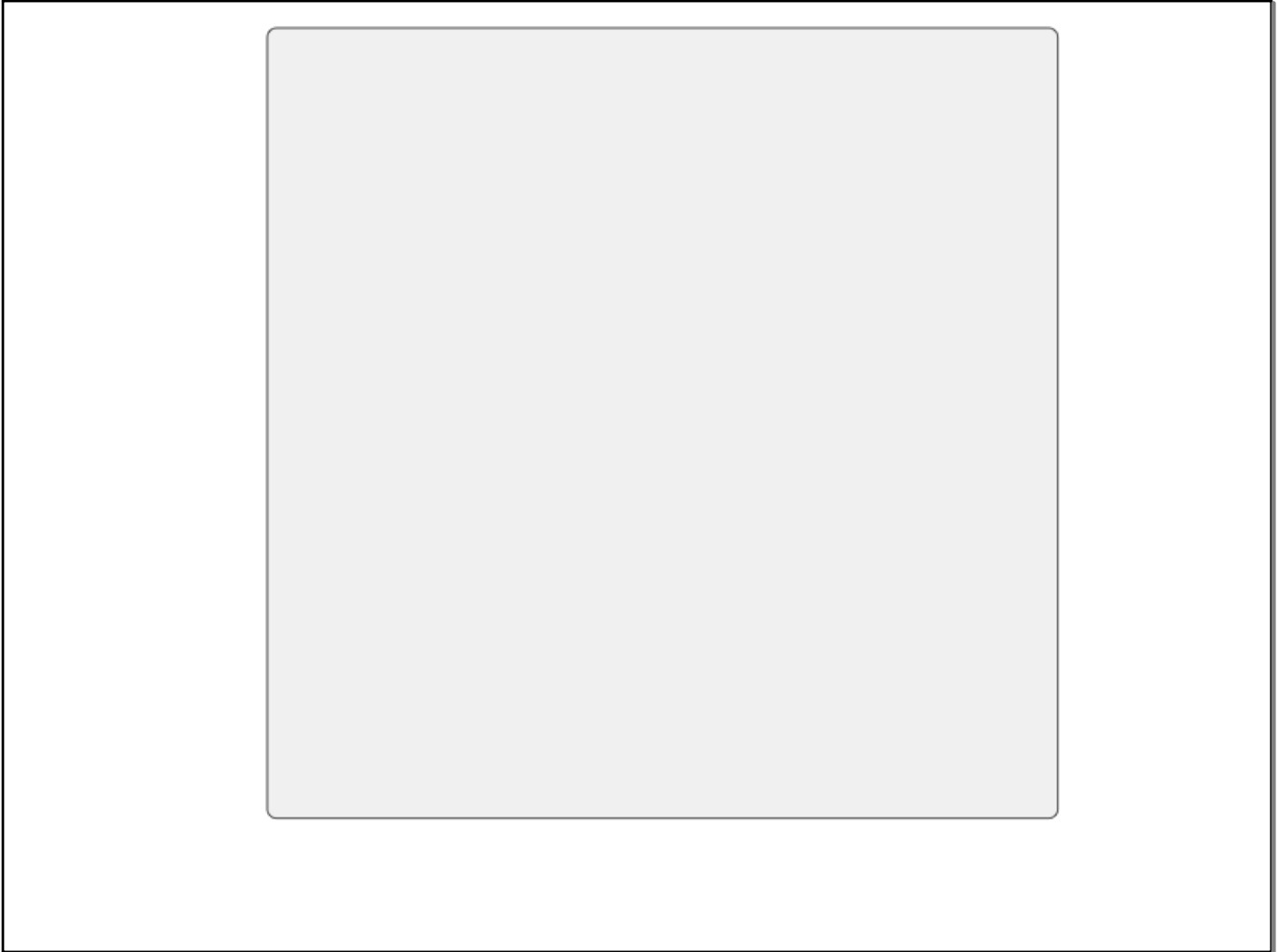
$$n^2 + 8n - 2 = 0$$

$$\frac{n^2 + 8n = 2}{+16 \quad +16}$$

$$\frac{n^2 + 8n + 16 = 18}{\sqrt{(n+4)^2} = \sqrt{18}}$$

$$\frac{n+4 = \pm\sqrt{18}}{-4 \quad -4}$$

$$\frac{n = -4 \pm \sqrt{18}}{=} = -4 \pm 3\sqrt{2}$$



$$4x^2 - 4x - 15 = 0$$

$$4 \pm \sqrt{16 - 4(4)(-15)}$$

$$\frac{4 \pm \sqrt{16 + 240}}{8}$$

$$\frac{4 \pm \sqrt{256}}{8}$$

$$\frac{4 \pm 16}{8} = \frac{20}{8}, \frac{-12}{8}$$

$$\frac{5}{2}, -\frac{3}{2}$$

$$2d^2 + 3d - 77 = 0$$

$$(2d - 11)(d + 7) = 0$$

$$d = \frac{11}{2}, -7$$

$$50x^2 - 98 = 0$$

$$+ 98 \quad + 98$$

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$$\frac{50x^2}{50} = \frac{98}{50}$$

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$$\sqrt{x^2} = \sqrt{\frac{98}{50}}$$

$$x = \frac{7\sqrt{2}}{5}$$



$$c^2 - 4c - 2 = 0$$

$$3p^2 - 4p + 1 = 0$$

$$x^2 + 6x + 8 = 0$$

$$12x^2 - 5x = 0$$

$$x^2 - 12x + 4 = 17$$

$$12y^2 + 24y = 5$$

$$x^2 + 7x - 11 = 7$$

$$2x^2 - 16x = 0$$



$$5x^2 - 7 = 0$$

