

HOMWORK: QUADRATIC FORMULA

NAME: _____

DAY 14 DUE: _____

Use the Quadratic Formula to solve the quadratic equations

1. $x^2 + 14x + 1 = 0$

$$x = \frac{-14 \pm \sqrt{196 - 4(1)(1)}}{2(1)}$$

$$x = \frac{-14 \pm \sqrt{192}}{2}$$

$$x = \frac{-14 \pm \sqrt{64}\sqrt{3}}{2}$$

$$x = \frac{-14 \pm 8\sqrt{3}}{2}$$

$$x = -7 \pm 4\sqrt{3}$$

2. $x^2 + 5x + 4 = 0$

$$x = \frac{-5 \pm \sqrt{25 - 4(1)(4)}}{2(1)}$$

$$x = \frac{-5 \pm \sqrt{9}}{2}$$

$$x = \frac{-5 \pm 3}{2}$$

$$x = \frac{-5+3}{2}, \frac{-5-3}{2}$$

$$x = -1, -4$$

3. $5x^2 - 2 = -62$

$$\begin{array}{r} +2 \quad +2 \\ \hline \end{array}$$

$$\frac{5x^2}{5} = \frac{-60}{5}$$

$$\sqrt{x^2} = \sqrt{-12}$$

$$x = \pm \sqrt{-12}$$

$$x = \pm \sqrt{-4}\sqrt{3}$$

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

4. $2x^2 + 5x = -3$

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

$$x = \frac{-5 \pm \sqrt{25 - 4(2)(3)}}{2(2)}$$

$$x = \frac{-5 \pm \sqrt{25 - 24}}{4}$$

$$x = \frac{-5 \pm \sqrt{1}}{4}$$

$$x = \frac{-5 \pm 1}{4}$$

$$x = \frac{-5+1}{4}, \frac{-5-1}{4}$$

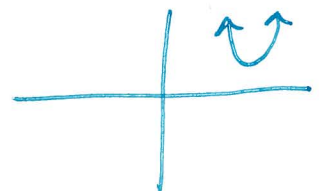
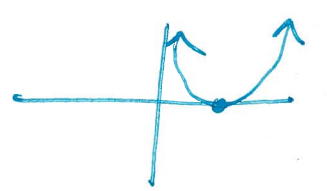
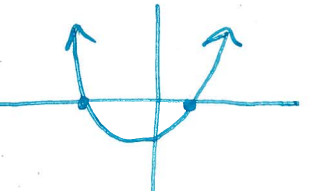
$$x = \frac{-4}{4}, \frac{-6}{4}$$

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

Solve using the quadratic formula.

<p>5. $2x^2 + 10x = 0$</p> $x = \frac{-10 \pm \sqrt{(-10)^2 - 4(2)(0)}}{2(2)}$ $x = \frac{-10 \pm \sqrt{100}}{4}$ $x = \frac{-10 \pm 10}{4}$ $x = \frac{-10+10}{4}, \frac{-10-10}{4}$ <p>$x = 0, -5$</p>	<p>6. $4x^2 + 12x = -9$</p> $4x^2 + 12x + 9 = 0$ $x = \frac{-12 \pm \sqrt{(12)^2 - 4(4)(9)}}{2(4)}$ $x = \frac{-12 \pm \sqrt{144 - 144}}{8}$ $x = \frac{-12 \pm \sqrt{0}}{8}$ <p>$x = -\frac{3}{2}$</p>
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Fill in the table!

Function	Discriminant $B^2 - 4AC$	Number and Type of Solutions	Possible Graph
1. $y = x^2 - 8x + 17$	$(-8)^2 - 4(1)(17)$ $64 - 68$ -4	2 imaginary	
2. $y = x^2 - 8x + 16$	$(-8)^2 - 4(1)(16)$ $64 - 64$ 0	1 Real	
3. $y = x^2 - 8x + 15$	$(-8)^2 - 4(1)(15)$ $64 - 60$ 4	2 Real	
4. $y = x^2 - 10x + 23$	$(-10)^2 - 4(1)(23)$ $100 - 92$ 8	2 Real	