

Lesson 1.7

Analytic Geometry
Mrs. Rape

Name: _____

Date: _____

COLLABORATIVE WORK: USING THE QUADRATIC FORMULA

INSTRUCTIONS:

1. Pair up with a partner (not your best friend)
2. Identify the "a", "b", and "c" for each problem
3. Solve using the quadratic formula

$$x = \frac{\text{opp} \pm \sqrt{(b)^2 - 4(a)(c)}}{2(a)}$$

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

$a = \underline{1}$ $b = \underline{5}$ $c = \underline{3}$

$$x = \frac{-5 \pm \sqrt{(5)^2 - 4(1)(3)}}{2(1)}$$

$$x = \frac{-5 \pm \sqrt{13}}{2} \begin{cases} \frac{-5 + \sqrt{13}}{2} = \underline{-0.697} \\ \frac{-5 - \sqrt{13}}{2} = \underline{-4.303} \end{cases}$$

2. $3x^2 + 10x + 7 = 0$

$a = \underline{3}$ $b = \underline{10}$ $c = \underline{7}$

$$x = \frac{-10 \pm \sqrt{(10)^2 - 4(3)(7)}}{2(3)}$$

$$x = \frac{-10 \pm \sqrt{16}}{6} \begin{cases} \frac{-10 + \sqrt{16}}{6} = \underline{-1} \\ \frac{-10 - \sqrt{16}}{6} = \underline{-2.333} \end{cases}$$

Lesson 1.7 continued

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$$3. \quad x^2 + 11x = -6$$

$$\begin{array}{r} +6 \quad +6 \\ \hline x^2 + 11x + 6 = 0 \end{array}$$

$$a = \underline{1} \quad b = \underline{11} \quad c = \underline{6}$$

$$x = \frac{-11 \pm \sqrt{(11)^2 - 4(1)(6)}}{2(1)}$$

$$x = \frac{-11 \pm \sqrt{97}}{2} \begin{cases} \frac{-11 + \sqrt{97}}{2} = \underline{-0.576} \\ \frac{-11 - \sqrt{97}}{2} = \underline{-10.424} \end{cases}$$

$$4. \quad x^2 + 10x = 200$$

$$x^2 + 10x - 200 = 0$$

$$a = \underline{1} \quad b = \underline{10} \quad c = \underline{-200}$$

$$x = \frac{-10 \pm \sqrt{(10)^2 - 4(1)(-200)}}{2(1)}$$

$$x = \frac{-10 \pm \sqrt{900}}{2} \begin{cases} \frac{-10 + \sqrt{900}}{2} = \underline{10} \\ \frac{-10 - \sqrt{900}}{2} = \underline{-20} \end{cases}$$

$$5. \quad 5x^2 + 6x = -2$$

$$5x^2 + 6x + 2 = 0$$

$$a = \underline{5} \quad b = \underline{6} \quad c = \underline{2}$$

$$x = \frac{-6 \pm \sqrt{(6)^2 - 4(5)(2)}}{2(5)}$$

$$x = \frac{-6 \pm \sqrt{-4}}{10} = \frac{-6 \pm 2i}{10} = \underline{\underline{\frac{-3 \pm i}{5}}}$$