

Name _____

Score _____/6

Last name, First Name Please Print Clearly

Sample Problem: Use the Quadratic Formula to solve the equation $5x^2 - x - 1 = 0$. Simplify your answer.

Sample Solution:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$= \frac{1 \pm \sqrt{1^2 - (4)(5)(-1)}}{2(5)} = \frac{1 \pm \sqrt{21}}{10}$$

The solution set for $5x^2 - x - 1 = 0$ is

$$\left\{ \frac{1 + \sqrt{21}}{10}, \frac{1 - \sqrt{21}}{10} \right\}$$

Problem: Use the Quadratic Formula to solve the equation $6x^2 - 2x - 1 = 0$. Simplify your answer.

Solution:

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

$$= \frac{2 \pm \sqrt{28}}{12} = \frac{2 \pm \sqrt{(4)(7)}}{12} = \frac{2 \pm \sqrt{4}\sqrt{7}}{12} = \frac{2 \pm 2\sqrt{7}}{2(6)} = \frac{1 \pm \sqrt{7}}{6}$$

The solution set for $6x^2 - 2x - 1 = 0$

is $\left\{ \frac{1 + \sqrt{7}}{6}, \frac{1 - \sqrt{7}}{6} \right\}$

Problem: Use the Quadratic Formula to solve the equation $7x^2 + 4x - 3 = 0$. Simplify your answer.

Solution:

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

$$= \frac{-4 \pm \sqrt{100}}{14} = \frac{-4 \pm 10}{14} = \frac{-14}{14} \text{ OR } \frac{6}{14} = -1 \text{ OR } \frac{3}{7}$$

The solution set for $7x^2 + 4x - 3 = 0$ is $\left\{ -1, \frac{3}{7} \right\}$

Problem: Use the Quadratic Formula to solve the equation $x^2 - 3x - 1 = 0$. Simplify your answer.

Solution:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{3 \pm \sqrt{(-3)^2 - 4(1)(-1)}}{2(1)} = \frac{3 \pm \sqrt{13}}{2}$$

The solution set for $x^2 - 3x - 1 = 0$ is $\left\{ \frac{3 + \sqrt{13}}{2}, \frac{3 - \sqrt{13}}{2} \right\}$