

NAME: \_\_\_\_\_ Score \_\_\_\_\_/15

Please **print** your name**No Decimals No mixed numbers No complex fractions No boxed or circled answer Show Work**

- T** F Every quadratic equation may be solved by using the Quadratic Formula.
- T** **F** The discriminant of a quadratic  $ax^2 + bx + c$  is  $b^2 + 4ac$ .
- T** F A quadratic equation may have no real solutions.
- T** **F** If the discriminant of a quadratic equation is negative, the graph of that equation consists of two points on the real number line.
- T** **F** The Zero Factor Property pertains only to quadratic equations.
- Solve  $2x^2 - 5x - 3 = 0$  by factoring and The Zero Factor Property. **Show Your Work**

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

$$(2x + 1)(x - 3) = 0$$

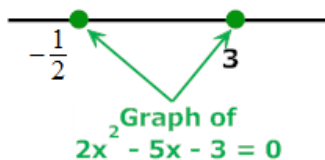
By The Zero Factor Property

$$2x + 1 = 0 \text{ OR } x - 3 = 0$$

$$x = -\frac{1}{2} \text{ OR } x = 3$$

The solution set is  $\left\{-\frac{1}{2}, 3\right\}$ The solution set for  $2x^2 - 5x - 3 = 0$  is  $\left\{-\frac{1}{2}, 3\right\}$ 

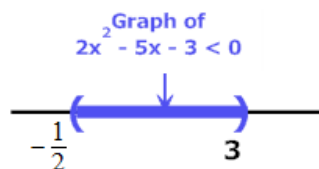
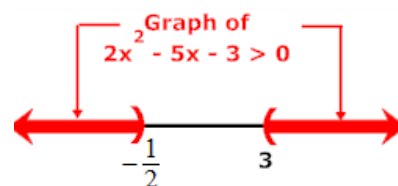
- Sketch the graph of  $2x^2 - 5x - 3 = 0$ . (Note that Questions 6, 7, and 8 are related)



- Deduce the answers for the following : (Use interval notation when appropriate)

a. The solution set  $2x^2 - 5x - 3 < 0$  is

$$\left(-\frac{1}{2}, 3\right)$$

b. The graph of  $2x^2 - 5x - 3 < 0$  isc. The solution set  $2x^2 - 5x - 3 > 0$  is  $\left(-\infty, -\frac{1}{2}\right) \cup (3, \infty)$ d. The graph of  $2x^2 - 5x - 3 > 0$  is**More Questions on Other Side**

9. **Quadratic Formula:** The solutions of a quadratic equation  $ax^2 + bx + c = 0$  are given by

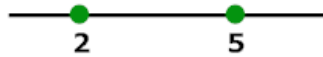
$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

10. If the solution set for the quadratic inequality  $ax^2 + bx + c > 0$  is the interval  $(8, 12)$  then

a. The solution set for the equation  $ax^2 + bx + c = 0$  is  $\{8, 12\}$ .

b. The solution set for the inequality  $ax^2 + bx + c < 0$  is  $(-\infty, 8) \cup (12, \infty)$ .

11. Sketch the graph of the quadratic equation in one variable whose solution set is  $\{2, 5\}$ .



**More Questions on Other Side**