

## ACT/SAT Practice:

26) . If  $f(x) = \frac{5x+2}{3}$ , what is the y-intercept of the graph of

$f^{-1}(x)$  ?

- A.  $-\frac{3}{2}$
- B.  $-\frac{2}{5}$
- C.  $\frac{3}{5}$
- D.  $\frac{2}{3}$
- E.  $\frac{3}{2}$

## Unit 2 ~ Quadratics

Objectives: A.REI.4b & N.CN.7

# Day 3: Quadratic Formula & Discriminant

## Quadratic Formula:

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

$ax^2 + bx + c = 0$ , where  $a, b, c$  are constants.  
numbers

Example 1: Find the solutions of  $x^2 + 5 = 4x$  by using the quadratic formula.

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

$$a=1 \quad b=-4 \quad c=5$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \quad x = \frac{4 \pm \sqrt{(-4)^2 - 4(1)(5)}}{2(1)} = \frac{4 \pm \sqrt{-4}}{2} = \frac{4 \pm 2i}{2}$$

$$x = 2 \pm i = x = 2 + i \text{ and } x = 2 - i \leftarrow \text{solutions.}$$

Example 2: Solve using the quadratic formula:

$$3x^2 + 9x = -3 = 3x^2 + 9x + 3 = 0$$

$a=3 \quad b=9 \quad c=3$

$$x = \frac{-9 \pm \sqrt{(9)^2 - 4(3)(3)}}{2(3)} = \frac{-9 \pm \sqrt{45}}{6} = \frac{-9 \pm 3\sqrt{5}}{6}$$

solutions  $\Rightarrow x = \frac{-9+3\sqrt{5}}{6} \quad x = \frac{-9-3\sqrt{5}}{6}$



