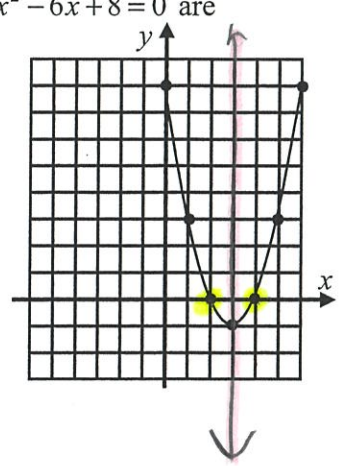


Do Now

1 The graph of  $y = x^2 - 6x + 8$  is shown. The **roots** of the equation  $x^2 - 6x + 8 = 0$  are

- (1) {8}
- (2) {2, 4}
- (3) {3}
- (4) {-1}

where the parabola crosses the x-axis where  $y = 0$



2 How many solutions does the following system of equations have?

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

$$y = -x - 2$$

- (1) 1
- (2) 2
- (3) 3
- (4) 0

how many times they intersect

put equations into  $y =$  + press graph

No solutions don't intersect

3 If the **two x-intercepts** of the graph of a quadratic function are **-3** and **9**, then the equation of the axis of symmetry is

- (1)  $x = 6$
- (2)  $x = -1$
- (3)  $x = 3$
- (4)  $x = 4$

Work backwards

$a = 1$   $b = -6$

$$y = x^2 - 6x - 27$$

$$x^2 - 6x - 27 = 0$$

$$x^2 - 9x + 3x - 27 = 0$$

$$(x + 3)(x - 9) = 0$$

$$x = -3 \quad x = 9$$

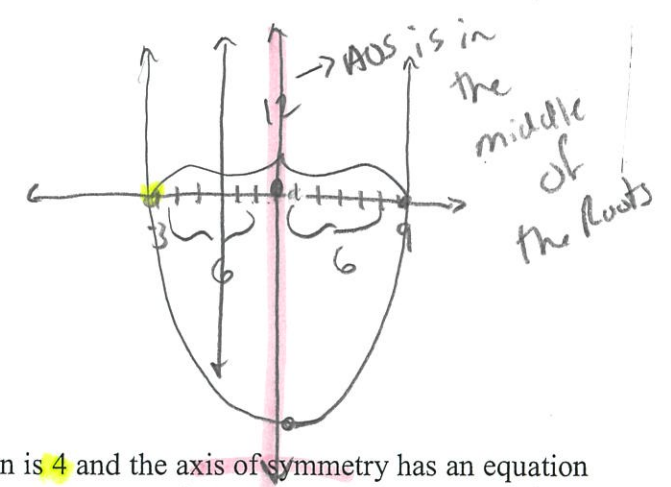
$$x = \frac{-b}{2a}$$

$$x = \frac{-(-6)}{2(1)}$$

$$x = \frac{6}{2}$$

$$x = 3$$

$$\frac{-2}{2} = -1$$



4 If **one x-intercept** of the graph of a quadratic function is **4** and the axis of symmetry has an equation of  $x = 7$ , then what is the other x-intercept?

check work backwards

$$a = 1 \quad b = -14$$

$$y = x^2 - 14x + 40$$

$$x^2 - 14x + 40 = 0$$

$$x^2 - 10x - 4x + 40 = 0$$

$$(x - 4)(x - 10) = 0$$

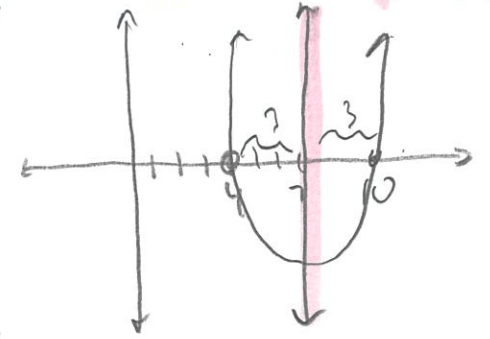
$$x = 4 \quad x = 10$$

$$x = \frac{-b}{2a}$$

$$x = \frac{-(-14)}{2(1)}$$

$$x = \frac{14}{2}$$

$$x = 7$$



$$x = 10$$