

Algebra 1B Handwritten

Quiz

$$y = x^2 - 4x - 45$$

+ 12
- 9
+ 12
- 9
+ 12
- 9
+ 12
- 9

$$x^2 - 4x - 45 = 0 \quad \left(\frac{-1}{2}\right)^2$$

$$x^2 - 4x + 4 = 45 + 4 \quad \left(\frac{-2}{1}\right)^2$$

$$x^2 - 4x + 4 = 49$$

$$(x-2)^2 = 49$$

$$x-2 = \pm 7$$

$$x = 2 + 7 = (9, 0)$$

$$x = 2 - 7 = (-5, 0)$$

ROOTS

2. Factoring

$$x^2 - 4x - 45 = 0$$

~~scribble~~

$$(x-9)(x+5) = 0$$

$$x-9 = 0$$

$$9 \quad 9$$

$$x = (9, 0)$$

$$x+5 = 0$$

$$-5 \quad -5$$

$$x = (-5, 0)$$

Roots

Quadratic Formula

$$x = \frac{-(-4) \pm \sqrt{(-4)^2 - 4(1)(-45)}}{2(1)}$$

$$x = \frac{4 \pm \sqrt{16 - 4(-45)}}{2}$$

$$x = \frac{4 \pm \sqrt{16 + 180}}{2}$$

Per

$$x = 4 \pm \sqrt{196}$$

$$x = 4 \pm 14$$

$$x = \frac{4 + 14}{2} = \frac{18}{2} = (9, 0)$$

ROOTS

$$x = \frac{4 - 14}{2} = \frac{-10}{2} = (-5, 0)$$

vertex

$$x = \frac{-(-4)}{2(1)} = \frac{4}{2} = 2$$

$$y = (2)^2 - 4(2) - 45$$

$$y = 4 - 8 - 45$$

$$-4 - 45 = -49$$

vertex

$$(2, -49)$$

