

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**THE ZEROES OF A QUADRATIC  
COMMON CORE ALGEBRA I HOMEWORK**

**FLUENCY**

1. The roots of  $x^2 - 6x - 16 = 0$  can be found by factoring as

(1)  $\{-16, 6\}$

(3)  $\{-2, 8\}$

(2)  $\{-8, 2\}$

(4)  $\{6, 16\}$

2. The equation  $(2x - 3)(x + 7) = 0$  has a solution set of

(1)  $\{-7, 1\frac{1}{2}\}$

(3)  $\{-7, 3\}$

(2)  $\{3, 7\}$

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

3. Find the roots of each of the following equations by factoring:

(a)  $x^2 - 36 = 0$

(b)  $x^2 + 12x + 27 = 0$

(c)  $3x^2 + 5x - 2 = 0$

(d)  $20x^2 - 10x = 0$

(e)  $10x^2 + x - 21 = 0$

(f)  $4x^2 - 16x - 84 = 0$

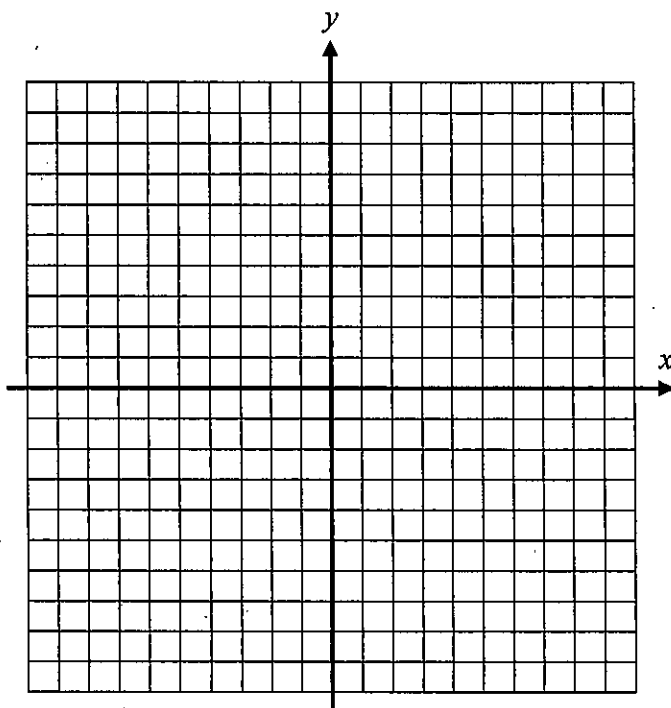


4. Consider the quadratic function  $y = x^2 - 4x - 5$ .

(a) Using your calculator, graph the function on the grid provided.

(b) State the zeroes of the function by inspecting the graph. Circle their locations.

(c) Find the zeroes algebraically by factoring. Verify that your answers match (b).



### APPLICATIONS

5. A baking soda rocket is fired upwards with an initial speed of 80 feet per second. Its height,  $h$ , above the ground in feet can be modeled using the equation:

$$h(t) = -16t^2 + 80t \quad \text{where } t \text{ is the time since launch in seconds}$$

At what time,  $t > 0$ , does the rocket hit the ground? Find algebraically using factoring.

### REASONING

6. The two quadratic equations below have the same solutions. Can you determine why? Completely factor both to see what they have in common.

$$x^2 - 7x + 12 = 0$$

$$3x^2 - 21x + 36 = 0$$

