

4.5 (Day 1) Homework

Deriving Quadratic Functions

Answer the following questions.

1. If you were given just one point, how many LINES could you create? Infinite
2. If you were given just one point, how many PARABOLAS could you create? Infinite
3. How many points does it take to create a unique LINE? 2
4. How many points does it take to create a unique PARABOLA? 3

Solve the following 2x2 systems using elimination.

5. $2x - 3y = -1$
 $2x + 3y = -19$

$4x = -20$
 $x = -5$ ✓ $(-5, -3)$

$-10 - 3y = -1$
 $-3y = 9$
 $y = -3$

6. $x + 5y = 1$
 $-3x + 4y = 16$

$3x + 15y = 3$
 $19y = 19$
 $y = 1$ ✓

$x + 5 = 1$
 $x = -4$ ✓ $(-4, 1)$

7. $x - 2y = 2$
 $-2(2x - y) = -5$

$-4x + 2y = 10$
 $x - 2y = 2$
 $-3x = 12$
 $x = -4$ ✓

$-4 - 2y = 2$
 $-2y = 6$
 $y = -3$

$(-4, -3)$

Solve the following 3x3 system using elimination.

Eliminate z
 $3x + y + z = 14$
 $-x + 2y - 3z = -9$
 $5x - y + 5z = 30$

$$(1) \quad 3x + y + z = 14$$

$$(3) \quad 5x - y + 5z = 30$$

$$(4) \quad 8x + 6z = 44$$

$$(2) \quad -x + 2y - 3z = -9$$

$$\cdot (2) (3) \quad 10x + 2y + 10z = 60$$

$$(6) \quad 9x + 7z = 51$$

$$7 (4) \quad (8x + 6z) = (44) \cdot 7 \quad 56x + 42z = 308$$

$$-6 (6) \quad (9x + 7z) = (51) \cdot -6 \quad -54x - 42z = -306$$

$$2x = 2$$

$$x = 1 \checkmark$$

$$8 + 6z = 44$$

$$6z = 36$$

$$z = 6 \checkmark$$

$$(1) \quad 3(1) + y + 6 = 14$$

$$3 + y + 6 = 14$$

$$y + 9 = 14$$

$$y = 5 \checkmark$$

$$(1, 5, 6)$$