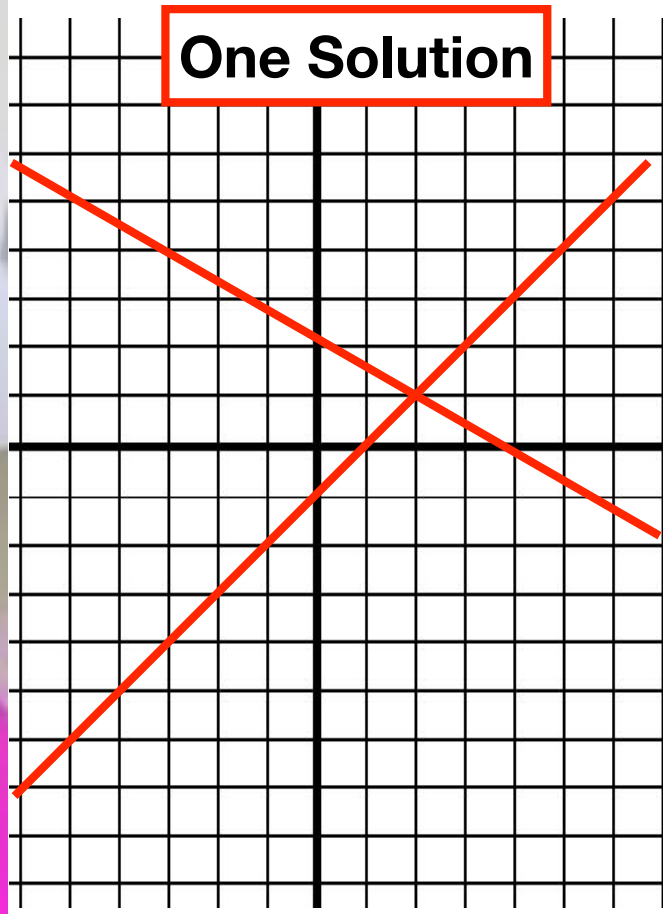
Chapter 1
Linear Functions

1. Parent Functions and Transformations
2. Transformations of Linear and Absolute Value Functions
3. Modeling with Linear Functions
4. **Solving Linear Systems**

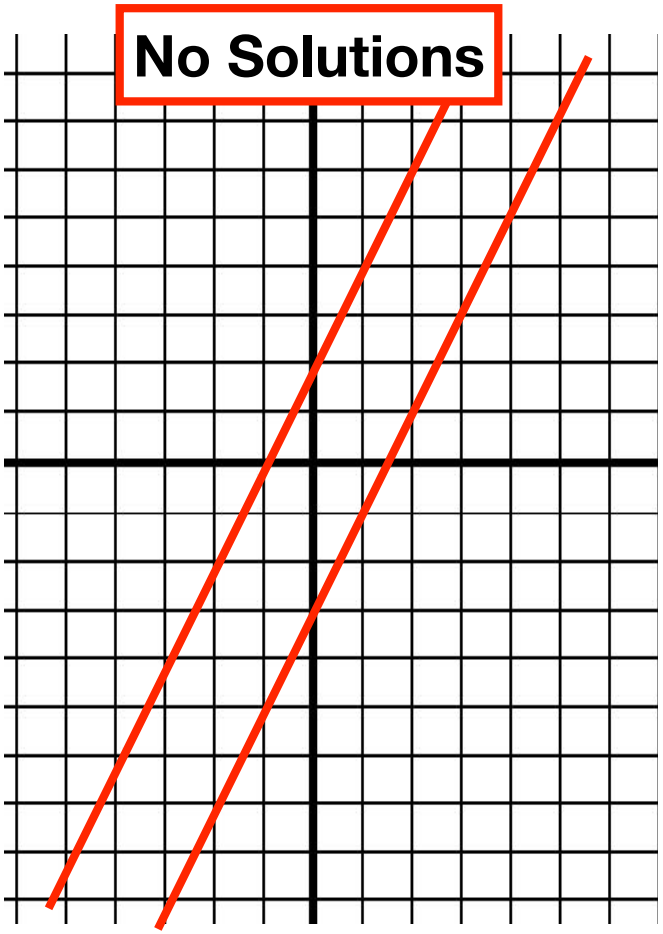
1.4 - Solving Linear Systems

Graphing Equation in Two Variables



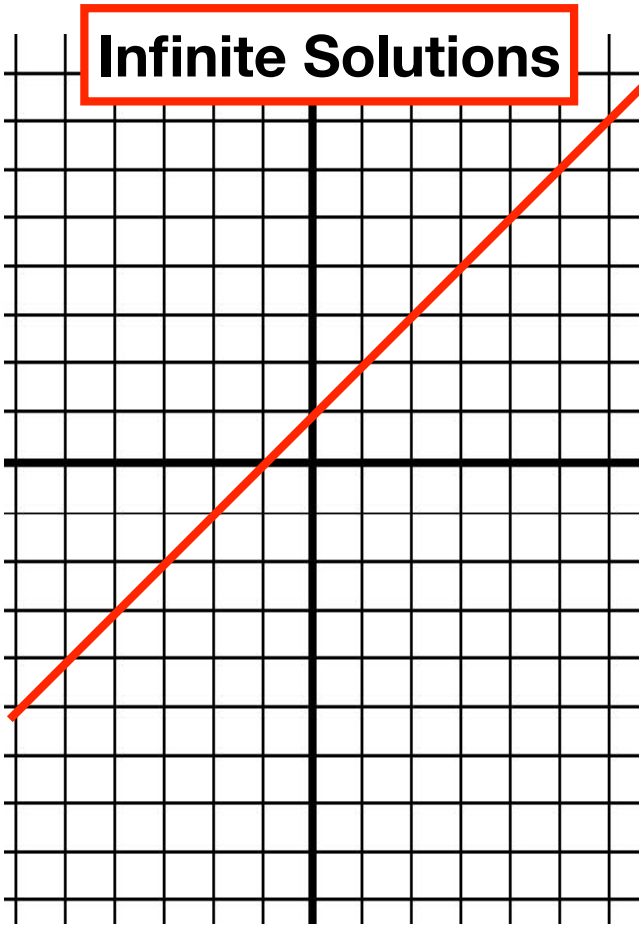
$$y = -\frac{1}{2}x + 2$$

$$y = x - 1$$



$$y = 2x + 2$$

$$y = 2x - 3$$



$$y = x + 1$$

$$y = x + 1$$

1.4 - Solving Linear Systems

Linear Equation in Two Variables

a. $3x - 7y = 10$

$6x - 8y = 8$

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

b. $8x + 2y = 4$

$-2x + 3y = 13$

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

1.4 - Solving Linear Systems

Practice - Linear Equation in Two Variables

7. $-3x + 3y = 3$

$3x + y = 9$

8. $5x - y = -9$

$2x + y = 2$

9. $-5x + 12y = 20$

$x - 2y = -6$

10. $4x - 2y = -2$

$6x + y = 5$

11. $3x + 2y = 1$

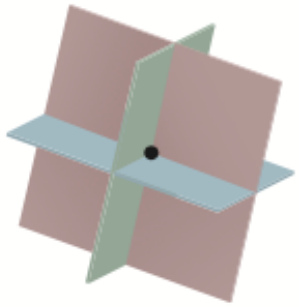
$4x + 6y = 7$

12. $7x - 3y = 6$

$-2x + 5y = -10$

1.4 - Solving Linear Systems

Linear Equation in Three Variables



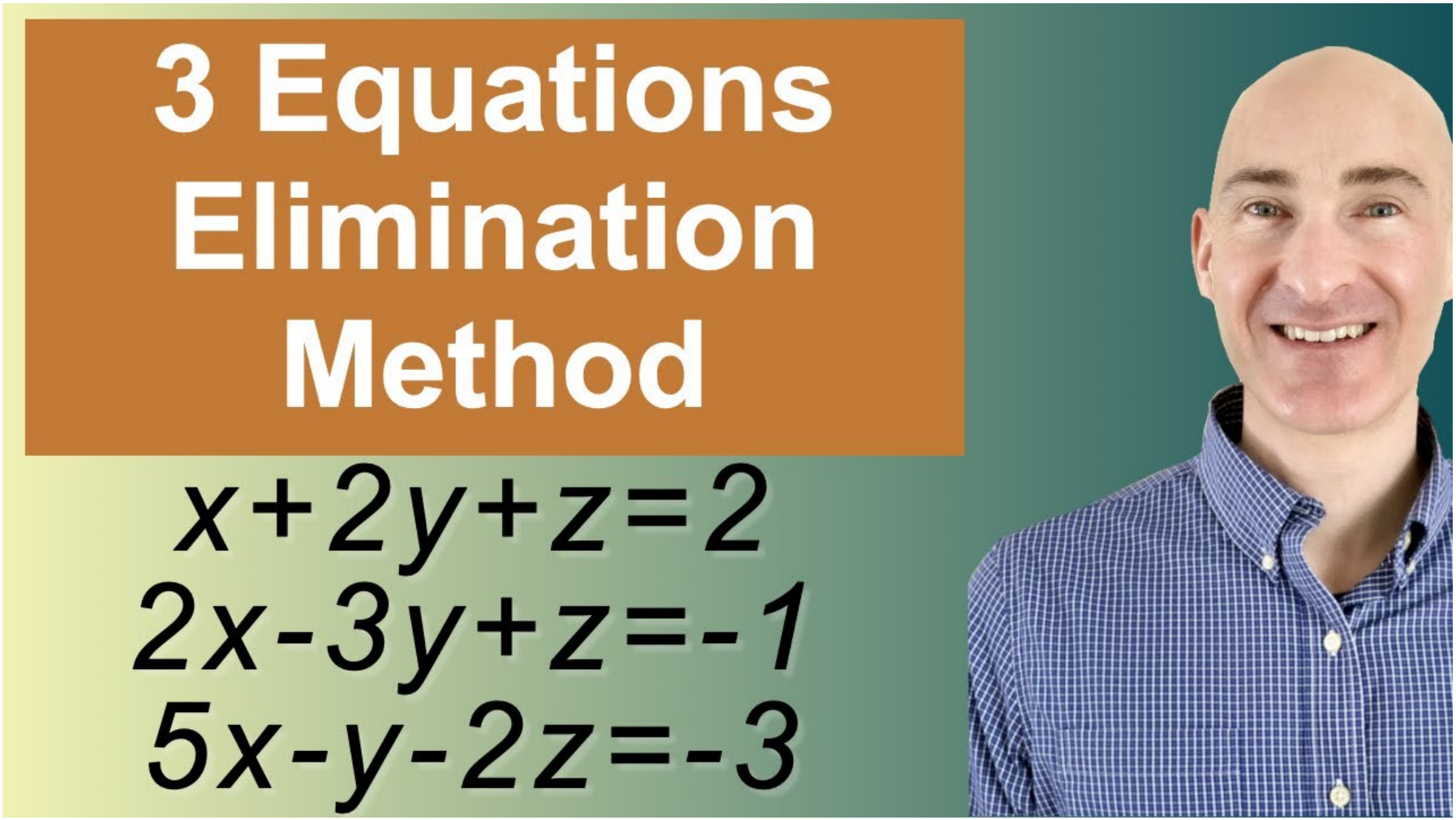
Exactly One Solution

Infinite Number of Solutions

No Solution

1.4 - Solving Linear Systems

Linear Equation in Three Variables



1.4 - Solving Linear Systems

Solve the system

$$4x + 2y + 3z = 1$$

$$2x - 3y + 5z = -14$$

$$6x - y + 4z = -1$$

$(2,\ 1,\ -3)$

1.4 - Solving Linear Systems

Solve the system

$$6x + 8y - 6z = 62$$

$$10x - 12y - 14z = 14$$

$$12x - 8y + 20z = -68$$

$(2, 4, -3)$

1.4 - Solving Linear Systems

Solve the system

$$x + y + z = 1$$

$$6x + 9y - 12z = 14$$

$$12x + 18y - 24z = -11$$

no solution

1.4 - Solving Linear Systems

Solve the system

$$2x - 2y + 2z = 12$$

$$10x - 2y + 10z = 60$$

$$2x + 2y + 2z = 12$$

infinite solutions
e.g. (6-z, 0, z)