

Name

6.5

Solve Special Types of Linear Systems

Alg I

I can identify the number of solutions of a linear system.

Inconsistent System: A system with no solution

Consistent Dependent System: A system with many solutions

Semester Exam

Example 1:

$$\begin{array}{r} 1) \quad 5x + 3y = 6 \\ \quad -5x - 3y = 3 \\ \hline \end{array}$$

$0 = 9$ NO SOLUTION

Example 2

$$2) \quad y = 2x - 4$$

$$-6x + 3y = -12$$

$$-6x + 3(2x - 4) = -12$$

$$-6x + 6x - 12 = -12$$

$$-12 = -12$$

Infinitely many solutions

Example 3

$$\begin{array}{r} 3) \quad x + 3y = -15 \\ \quad -x \quad \quad -1x \\ \hline \end{array}$$

$$\begin{array}{r} -3y = -1x - 15 \\ \quad -3 \quad \quad -3 \\ \hline \end{array}$$

$$y = \boxed{\frac{1}{3}x + 5}$$

$$\begin{array}{r} 2x - 3y = -18 \\ \quad -2x \quad \quad -2x \\ \hline \end{array}$$

$$\begin{array}{r} -3y = -2x - 18 \\ \quad -3 \quad \quad -3 \\ \hline \end{array}$$

$$y = \boxed{\frac{2}{3}x + 6}$$

NOTHING MATCHES: 1 SOLUTION

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Solve Special Types

Alg I

of Linear Systems

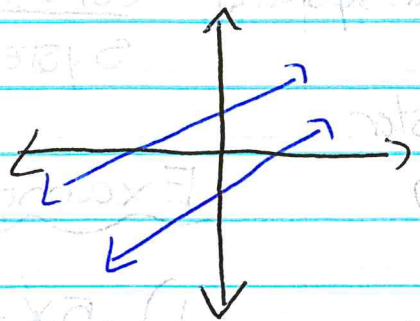
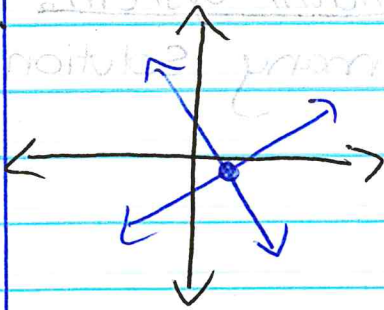
I can identify the number of solutions of a linear system

Number of Solutions

1 SOLUTION

NO SOLUTION

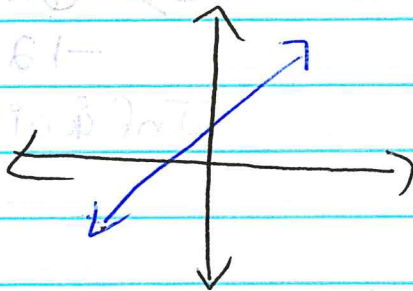
Semester Exam



The lines intersect
The lines have different slopes

The lines are parallel
The lines have the same slope and different y-intercepts

Infinitely many SOLUTIONS



The lines are the same
The lines have the same slope and y-intercept

Example 3

$$\begin{aligned} 81 &= 18x + 18 \\ 81 &= 18x + 18 \\ 81 - 18 &= 18x + 18 - 18 \\ 63 &= 18x \\ \frac{63}{18} &= \frac{18x}{18} \\ 3.5 &= x \end{aligned}$$

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