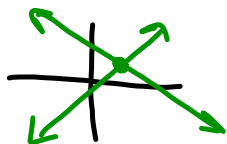


Topics-

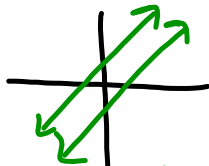
Ch 3 - Systems

3.1 → Graph the system

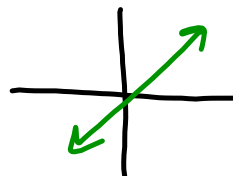
↳ solution is where they cross (or don't)



1 solution



no solution



Infinitely many

↳ classify:
consistent &
independent

inconsistent

consistent &
dependent

3.2 - Solving Algebraically

↳ sub.

1) solve for x or y

2) plug it in

↳ elim.

1) try to cancel x or y

2) Add vertically

3) plug x or y back in

4) Answer as (x, y)

3.3 → Systems of inequalities

↳ graph both lines

Solve by graphing. Check algebraically.

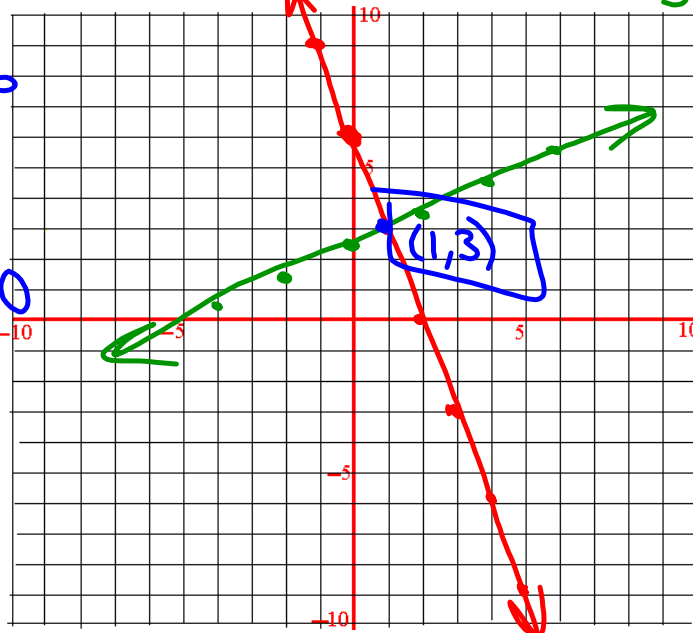
$$y = -3x + 6$$

$$3(1) + (3) = 6$$
$$6 = 6$$

$$-2(1) + 4(3) = 10$$
$$10 = 10$$

$$3x + y = 6$$
$$-2x + 4y = 10$$

$$\frac{4y}{4} = \frac{2x}{4} + \frac{10}{4}$$
$$y = \frac{1}{2}x + \frac{5}{2}$$

Classify the system: *consistent & independent*

Solve the system by substitution.

$$3x + 12y = 18$$

$$-4x + 16y = 12$$

$$\begin{array}{r} -16y \quad -16y \\ \hline -4x = -\frac{16y}{-4} + \frac{12}{-4} \end{array}$$

$$x = 4y - 3$$

$$3(4y - 3) + 12y = 18$$

$$12y - 9 + 12y = 18$$

$$24y - 9 = 18$$

$$\frac{24y}{24} = \frac{27}{24} \quad \left(y = \frac{9}{8} \right)$$

$$\left(\begin{array}{c} 3 \\ 2, \frac{9}{8} \end{array} \right)$$

$$\begin{aligned} x &= 4\left(\frac{9}{8}\right) - 3 \\ &= \frac{36}{8} - 3 \\ &= \frac{9}{2} - 3 \\ &= \frac{9}{2} - \frac{6}{2} \\ &= \frac{3}{2} \end{aligned}$$

Classify the system:

Solve the system by elimination.

$$\begin{array}{l} 6(7x - 21y = 42) \\ -7(6x - 18y = 36) \end{array}$$

$$\begin{array}{r} 42x - 126y = 252 \\ -42x + 126y = -252 \\ \hline 0 = 0 \end{array}$$

Infinitely many

Classify the system: consistent ∇ -dependent