# DO NOW

Pick up the worksheet from up front.

Please complete 1 - 4.

Page 1

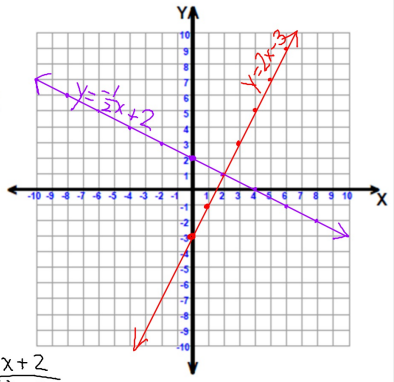
**Do Now:**

Graph $y = 2x - 3$

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

$y = 2x - 3$: $m = \frac{2\uparrow}{1\rightarrow}$, $b = -3$

$y = -\frac{1}{2}x + 2$: $m = \frac{-1\downarrow}{2\rightarrow}$, $b = 2$




2. yes

3. (2, 1)

4.

| y | 2x − 3 |
|---|---|
| 1 | 2(2) − 3 |
| 1 | 4 − 3 |
| 1 | 1 ✓ |

| y | $-\frac{1}{2}x + 2$ |
|---|---|
| 1 | $-\frac{1}{2}(2) + 2$ |
| 1 | −1 + 2 |
| 1 | 1 ✓ |

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## 5.1 Solving Systems of Equations Graphically

system of equations - 2 or more equations given together

solving a system of equations means: finding common solutions

Procedure:

1. Graph both equations on the same coordinate plane.
2. Identify the coordinates for any point of intersection.
3. Check in both equations.

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## 3 Types of Systems:

1. Consistent and independent system
   ↳ one point of intersection
   Answer: (x, y)
2. consistent and dependent system
   ↳ same line with a different name
   Answer: Infinite solutions
3. Inconsistent system
   ↳ parallel lines
   Answer: No solution

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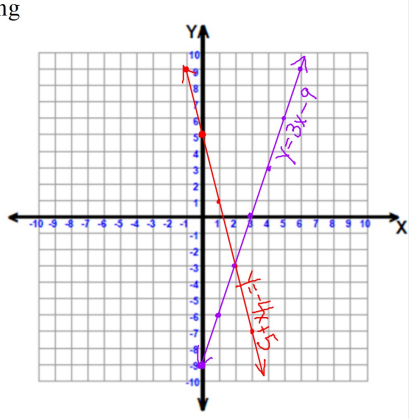
***Example***: Solve by graphing

1. $y = -4x + 5$
   $y = 3x - 9$

$y = -4x + 5$: $m = \frac{-4\downarrow}{1\rightarrow}$, $b = 5$

$y = 3x - 9$: $m = \frac{3\uparrow}{1\rightarrow}$, $b = -9$

(2, −3)




Check:

| Y | −4x + 5 |
|---|---|
| −3 | −4(2) + 5 |
| −3 | −8 + 5 |
| −3 | −3 ✓ |

| Y | 3x − 9 |
|---|---|
| −3 | 3(2) − 9 |
| −3 | 6 − 9 |
| −3 | −3 ✓ |

This is a consistent and independent system.

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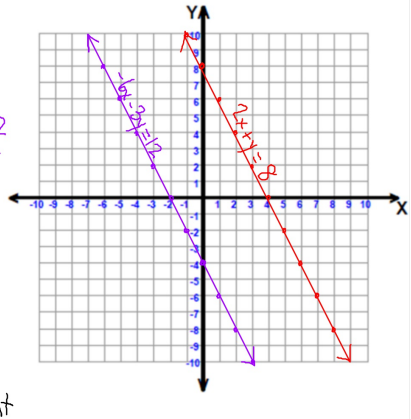
2. $2x + y = 8$
   $-6x - 3y = 12$

$2x + y = 8$: $y = -2x + 8$, $m = \frac{-2\downarrow}{1\rightarrow}$, $b = 8$

$-6x - 3y = 12$: $-3y = 6x + 12$, $y = \frac{6x + 12}{-3}$, $y = \frac{6x}{-3} + \frac{12}{-3}$, $y = -2x - 4$, $m = \frac{-2\downarrow}{1\rightarrow}$, $b = -4$

NO solution




This is an inconsistent system.

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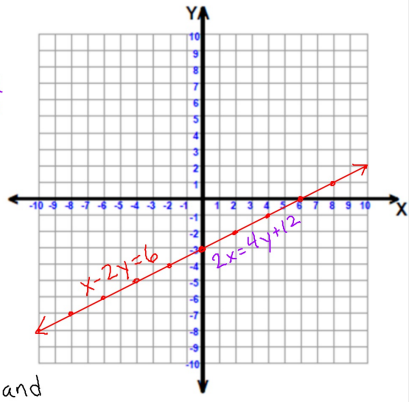
3. $x - 2y = 6$
$2x = 4y + 12$

$x-2y=6$
$-2y=-x+6$
$y=\frac{-x+6}{-2}$
$y=\frac{-x}{-2}+\frac{6}{-2}$
$y=\frac{1}{2}x-3$
$m=\frac{1\uparrow}{2\rightarrow}$
$b=-3$

$2x=4y+12$
$2x-12=4y$
$\frac{2x-12}{4}=y$
$\frac{2x}{4}-\frac{12}{4}=y$
$\frac{1}{2}x-3=y$
$m=\frac{1\uparrow}{2\rightarrow}$
$b=-3$

infinite solutions

This is a consistent and dependent solution.






# HOMEWORK

Worksheet - HW 5.1