

Warm-up

Nov 26

1) Solve for  $y$  when  $x = 4$ 

a)  $y = 9x + 7$

$$y = 9(4) + 7$$

$$y = 36 + 7$$

$$y = 43$$

2) Create a table of values for  $y = 10x - 5$  & identify any patterns

$x = 1$        $x = 2$        $x = 3$

$y = 10x - 5$

$y = 10(2) - 5$

$y = 10(1) - 5$

$y = 20 - 5 + 1$

$y = 10 - 5$

$y = 15$

$y = 5$

$y = 10(3) - 5$

$y = 30 - 5$

$y = 25$

x	y
1	5
2	15
3	25

↙ ↘ +10

$y$  increases by  
10 when  $x$   
increases by 1

*What is a linear relation?*

- A relationship between two variables,  $x$  and  $y$ , where the **graph forms a straight line**.
- $x$  is the independent variable, and  $y$  is the dependent variable
  - > This means that the value of  $y$  always depends on what the value of  $x$  is.
- A single transformation changes the value of  $y$  as  $x$  changes

•  $y = mx + b$

what we've been doing

This is what we've been working with

Example:

$$y = 2x + 8$$

Let's  
create a  
graph for  
this  
equation

$y = 2x + 8$

Step 1: We need a table of values

x	y
1	10
2	12
3	14
4	16

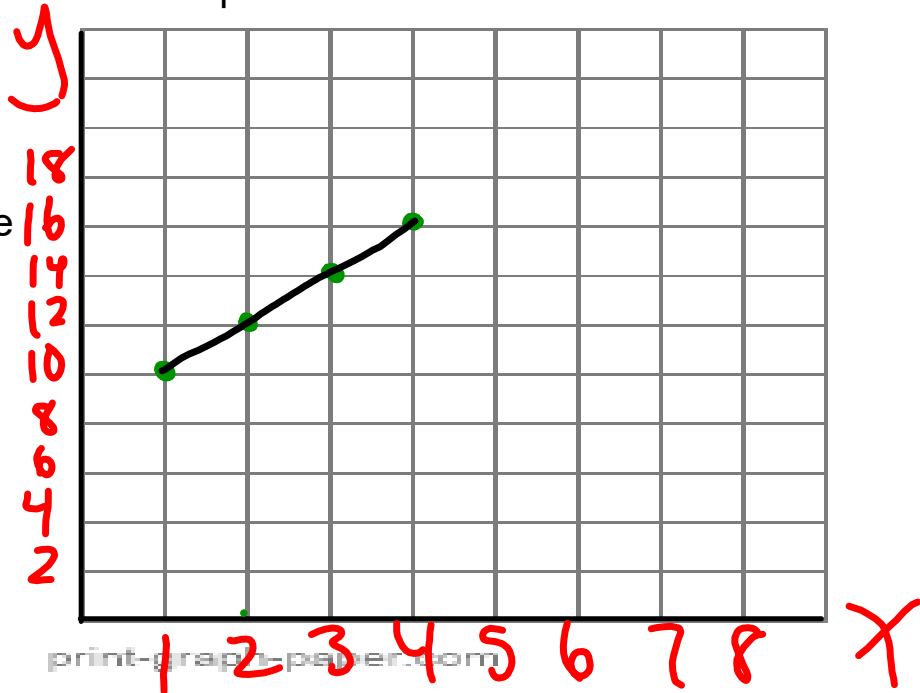
$y = 2(1) + 8$   
 $y = 2 + 8$   
 $y = 10$   
 $y = 2(2) + 8$   
 $y = 4 + 8$   
 $y = 12$

$y = 2(3) + 8$   
 $y = 6 + 8$   
 $y = 14$

Step 2: plot our ordered pairs

Step 3: connect the points

- (x, y)
- (1, 10)
  - (2, 12)
  - (3, 14)
  - (4, 16)



## Ordered pairs:

- **An ordered pair is a pair of elements or numbers written in a specific and fixed order.**
- **We use ordered pairs to plot the points in our table of values on a graph**
- **(X, Y)**
  - > **The order of the plots ALWAYS goes x, then y.**
  - > **X-axis is your horizontal axis**
  - > **Y-axis is your vertical axis.**

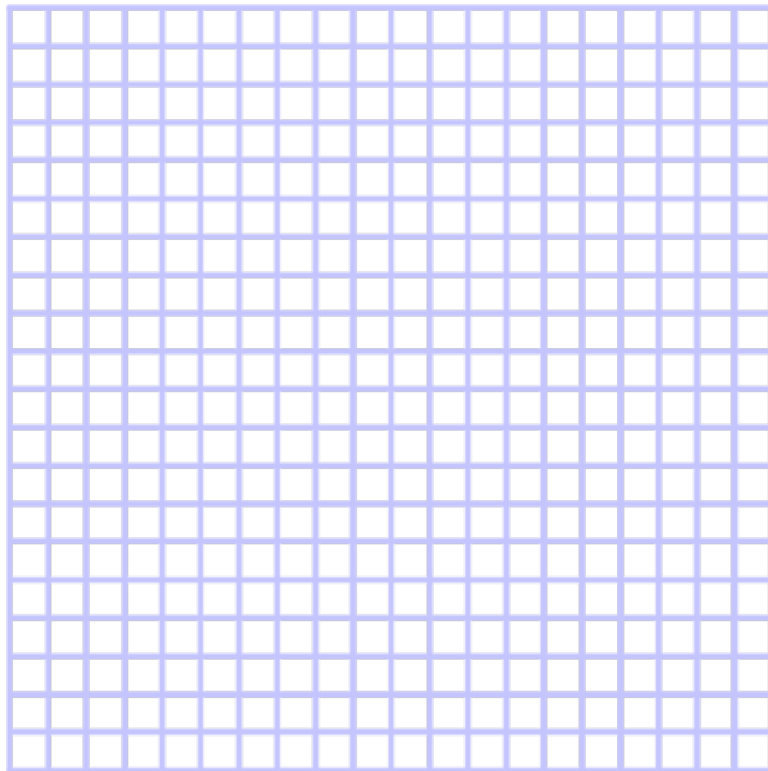
You try....graph these equations (create the table of values, then plot the points & connect them)

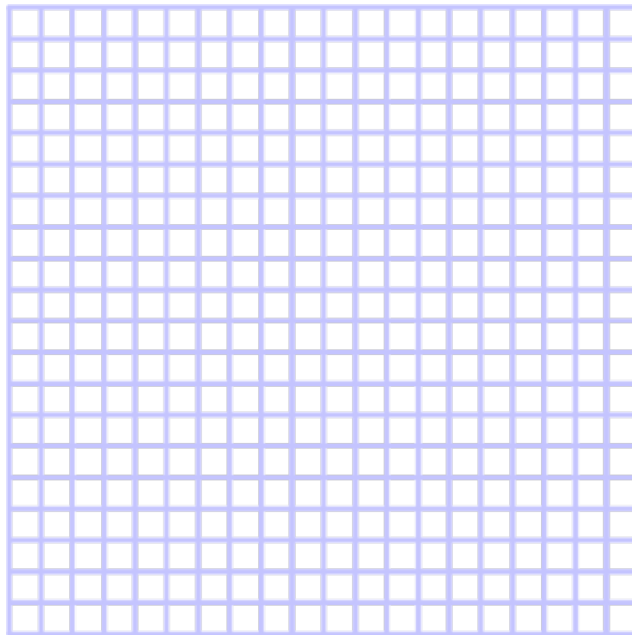
**NOTE: THEY SOULD ALL MAKE A STRAIGHT LINE....**

$$A) y = 6x - 2$$

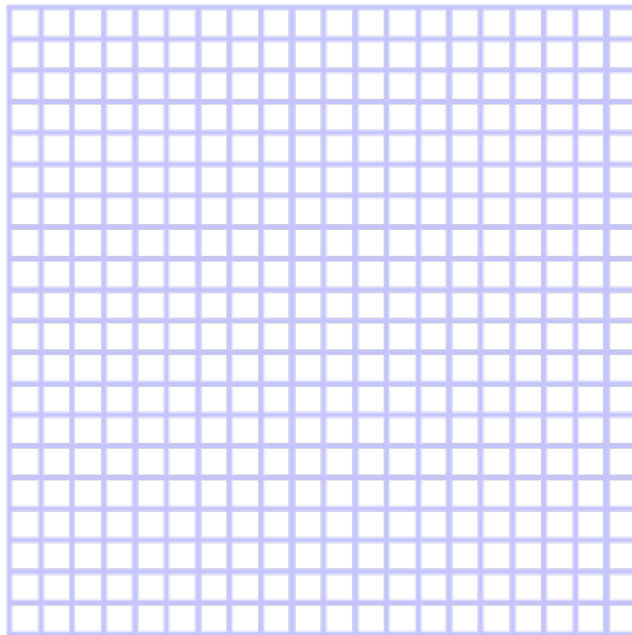
$$B) y = 4x + 3$$

$$C) y = 3x + 1$$











## Attachments

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