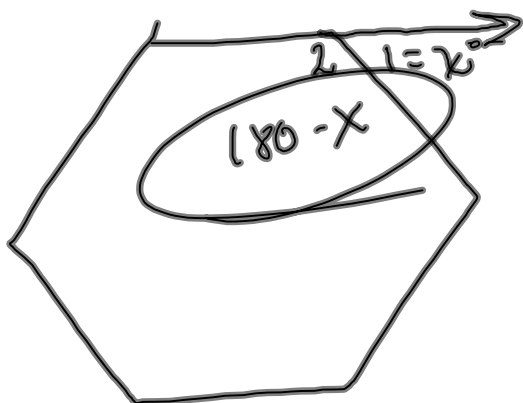


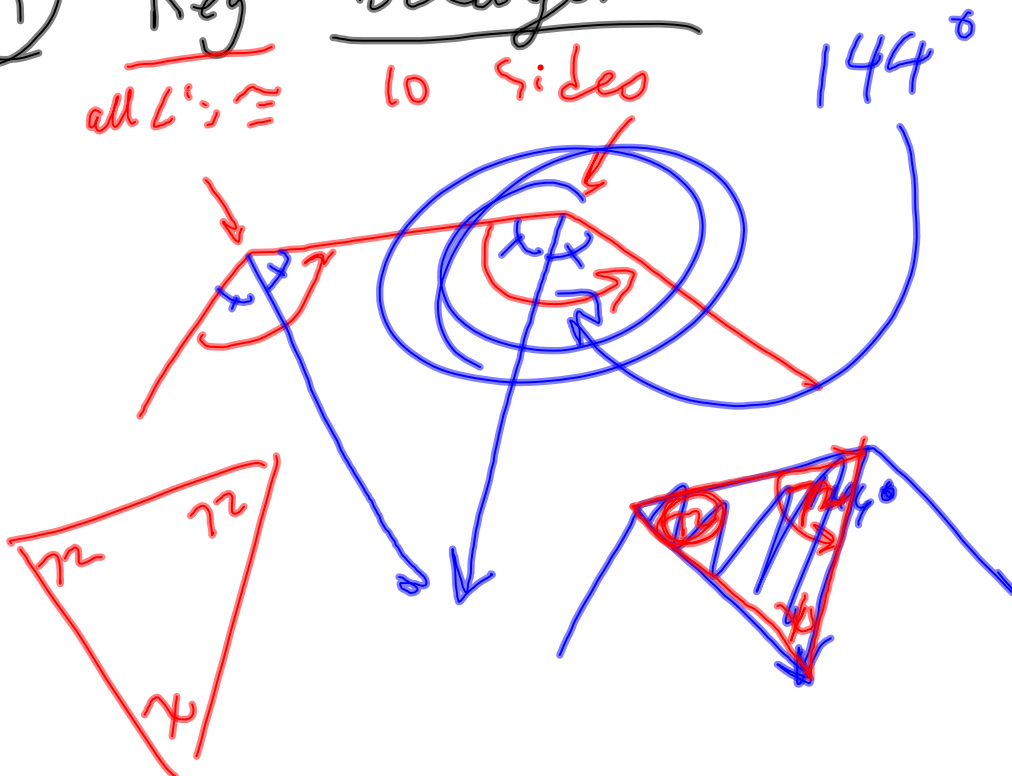
(#44) Regular Polygon  
 Each Ext  $\angle$   $(x^\circ)$   $\left( \frac{360}{x} \right)$  # Sides



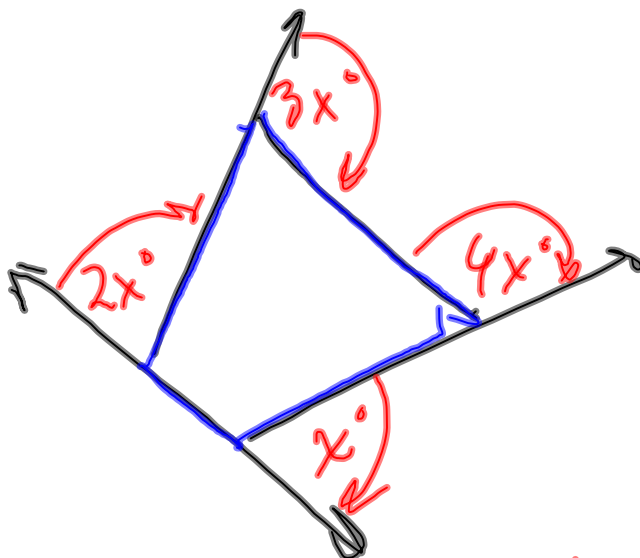
$$x + y = 180$$

$$y = 180 - x$$

(59) Key Decagon  
 all  $\angle$ 's  $\cong$  10 sides



#49

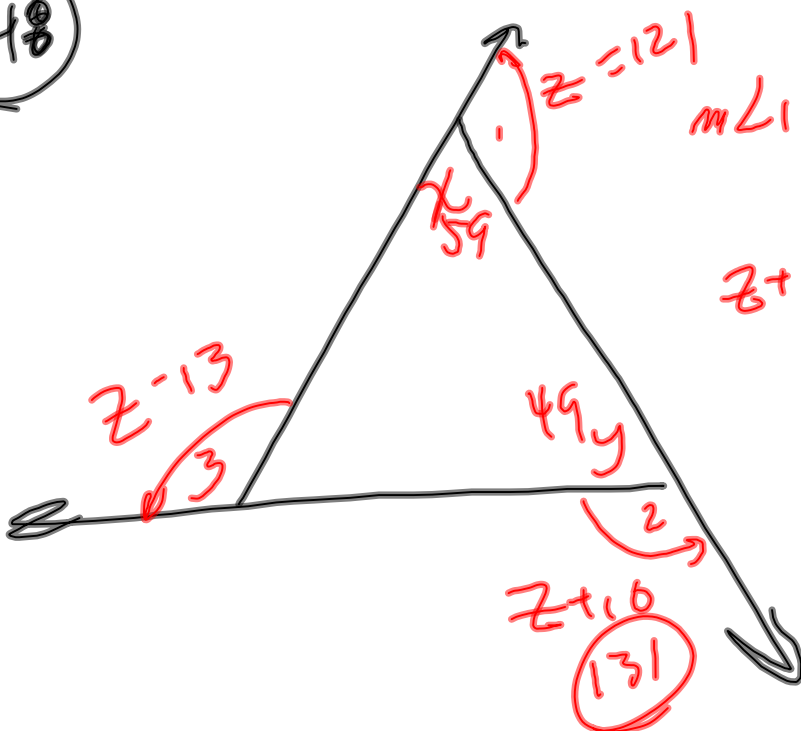


$$x + 2x + 3x + 4x = 360$$

$$10x = 360$$

$$x = 36^\circ$$

#48

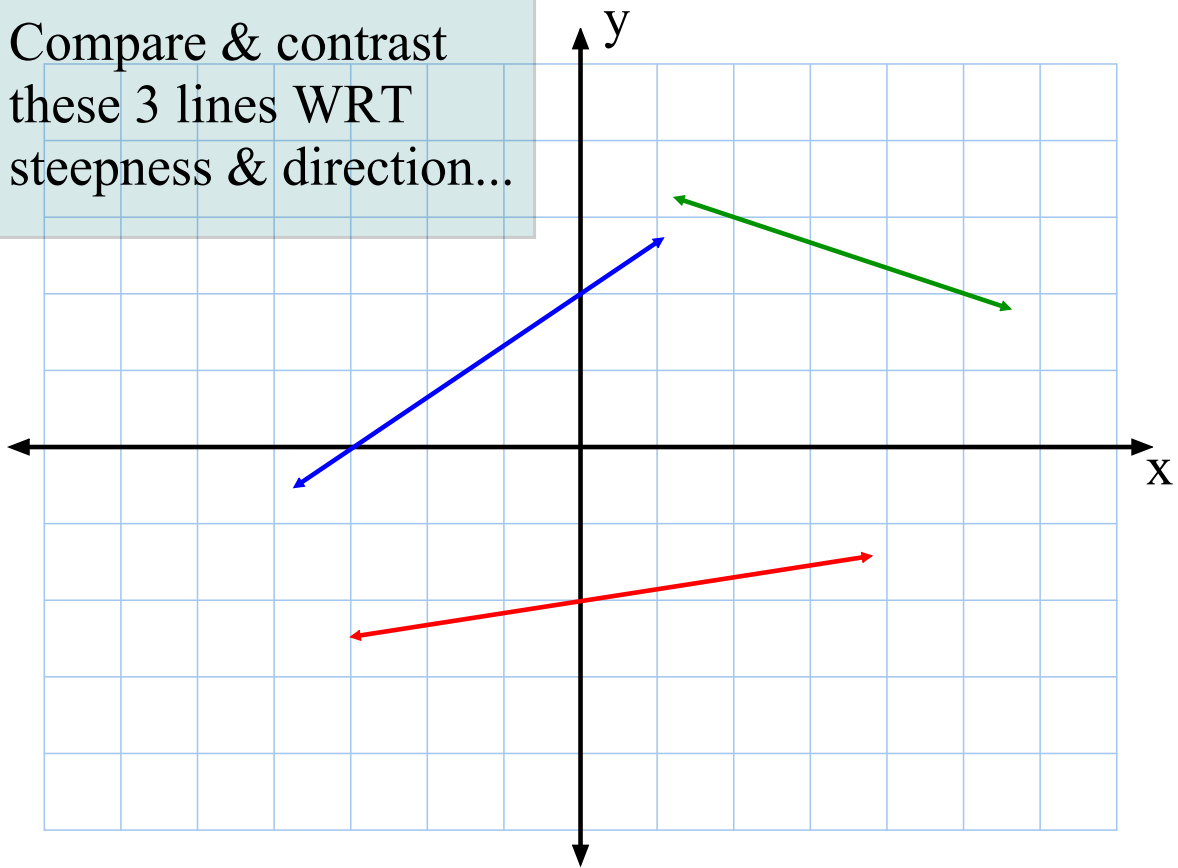


$$m\angle 1 + m\angle 2 + m\angle 3 = 360$$

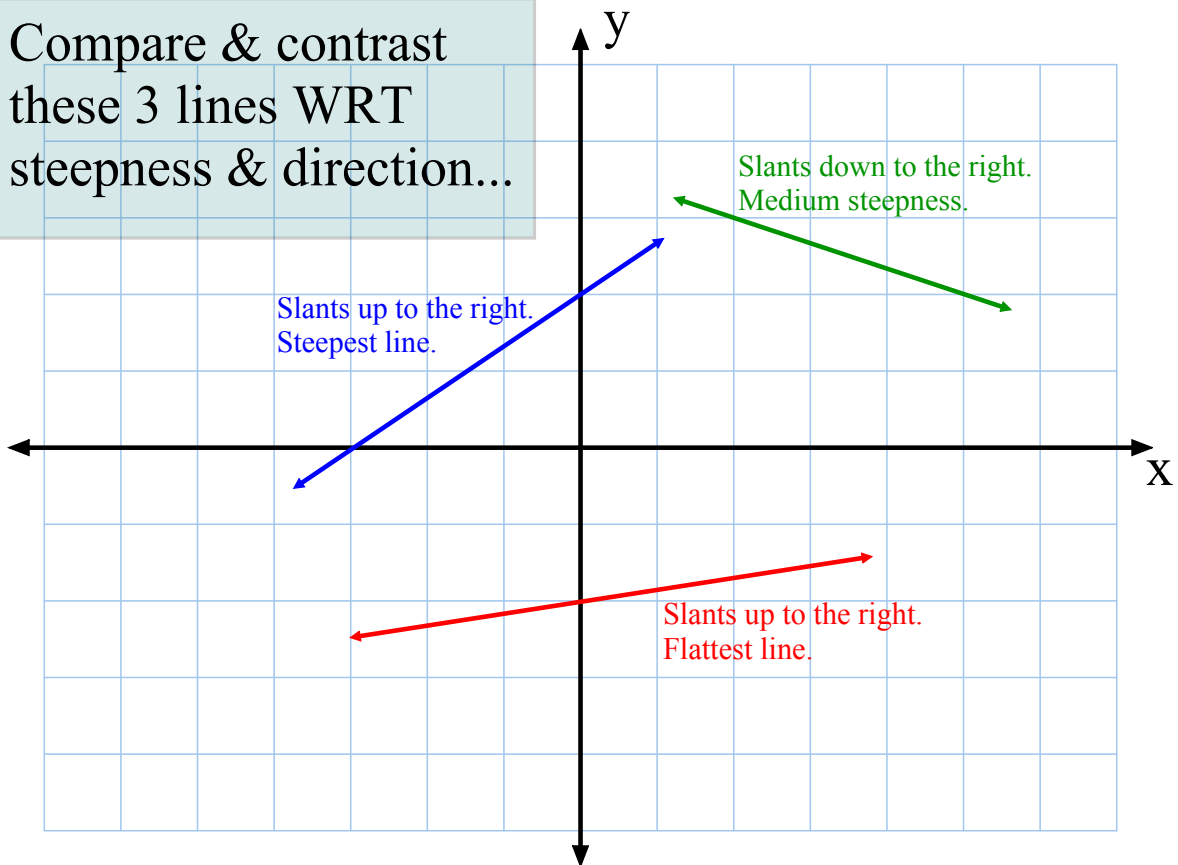
$$z + z + 13 + z + 10 = 360$$

$$z = 121$$

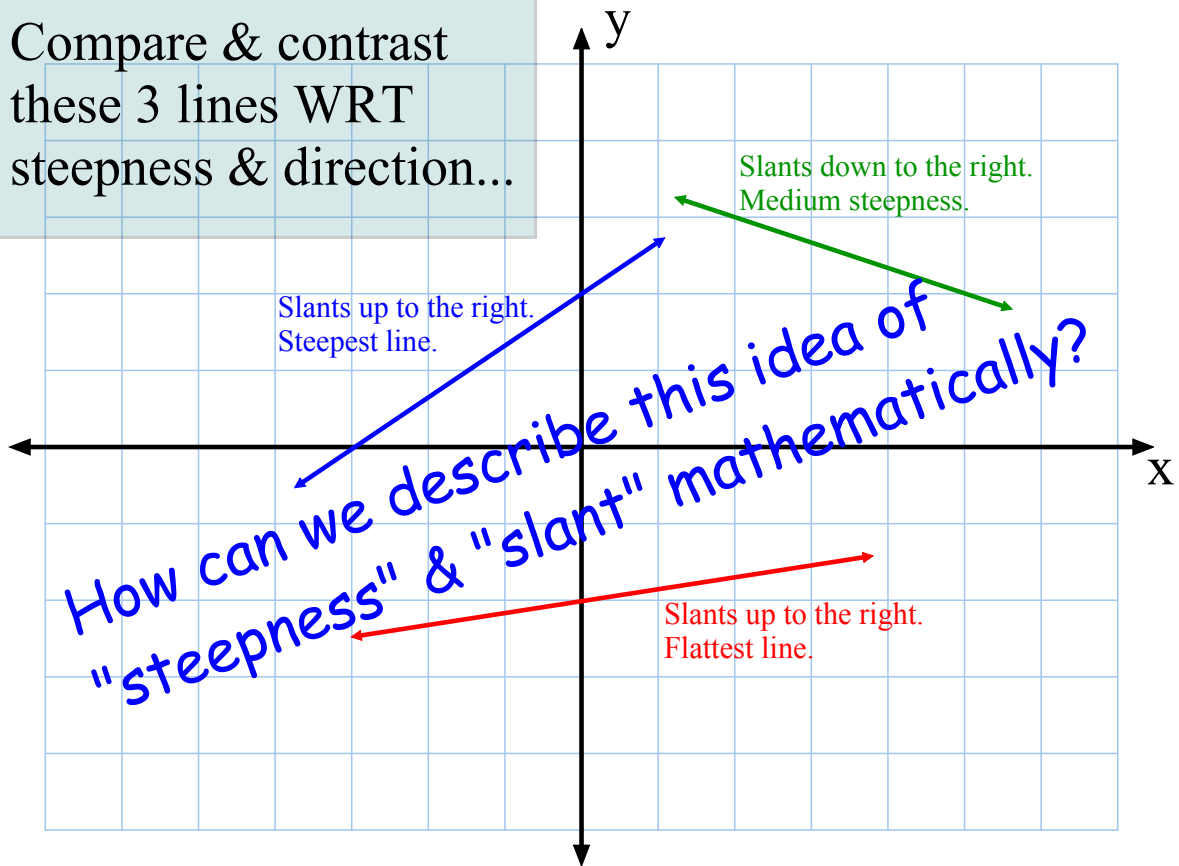
Compare & contrast these 3 lines WRT steepness & direction...



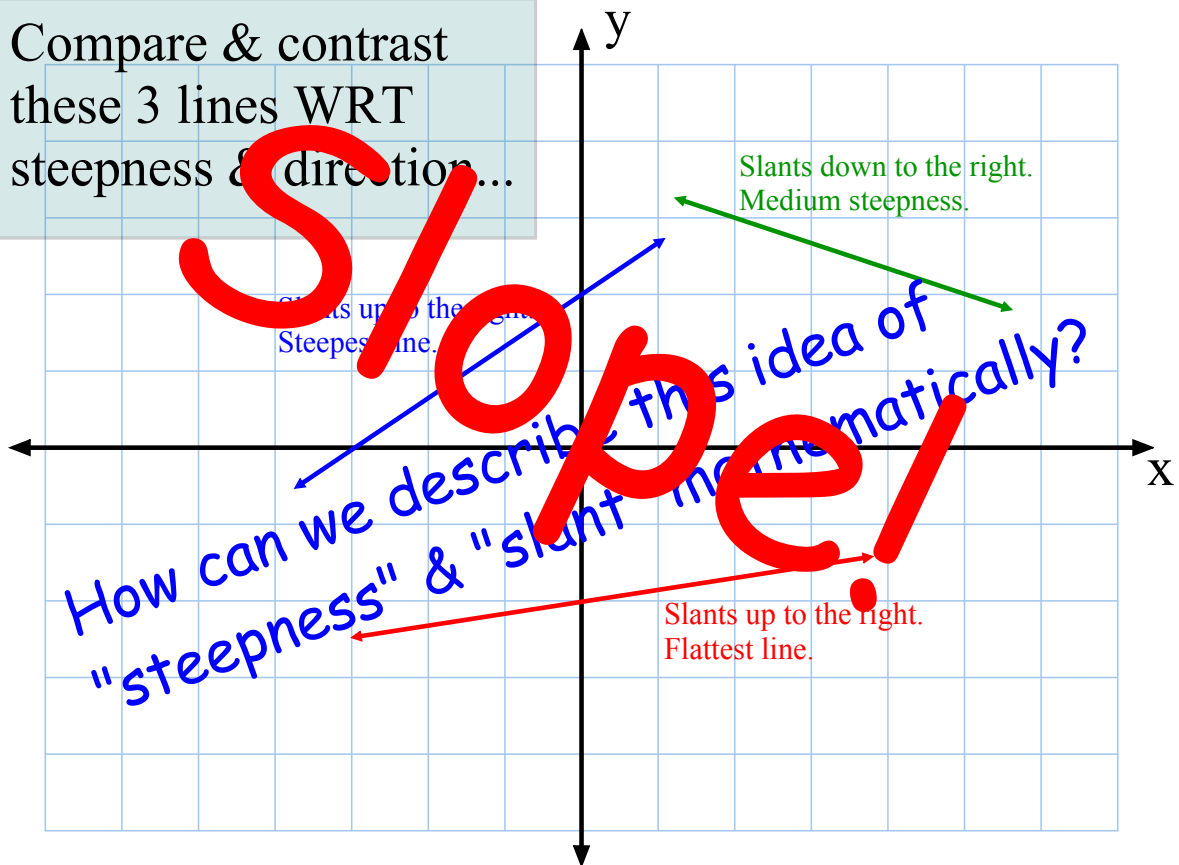
Compare & contrast these 3 lines WRT steepness & direction...



Compare & contrast these 3 lines WRT steepness & direction...



Compare & contrast these 3 lines WRT steepness & direction...



## Slope

A numerical measure of the steepness of a line.

Also tells which direction it tilts.

Represented by the letter  $m$ .

$$m = 6$$

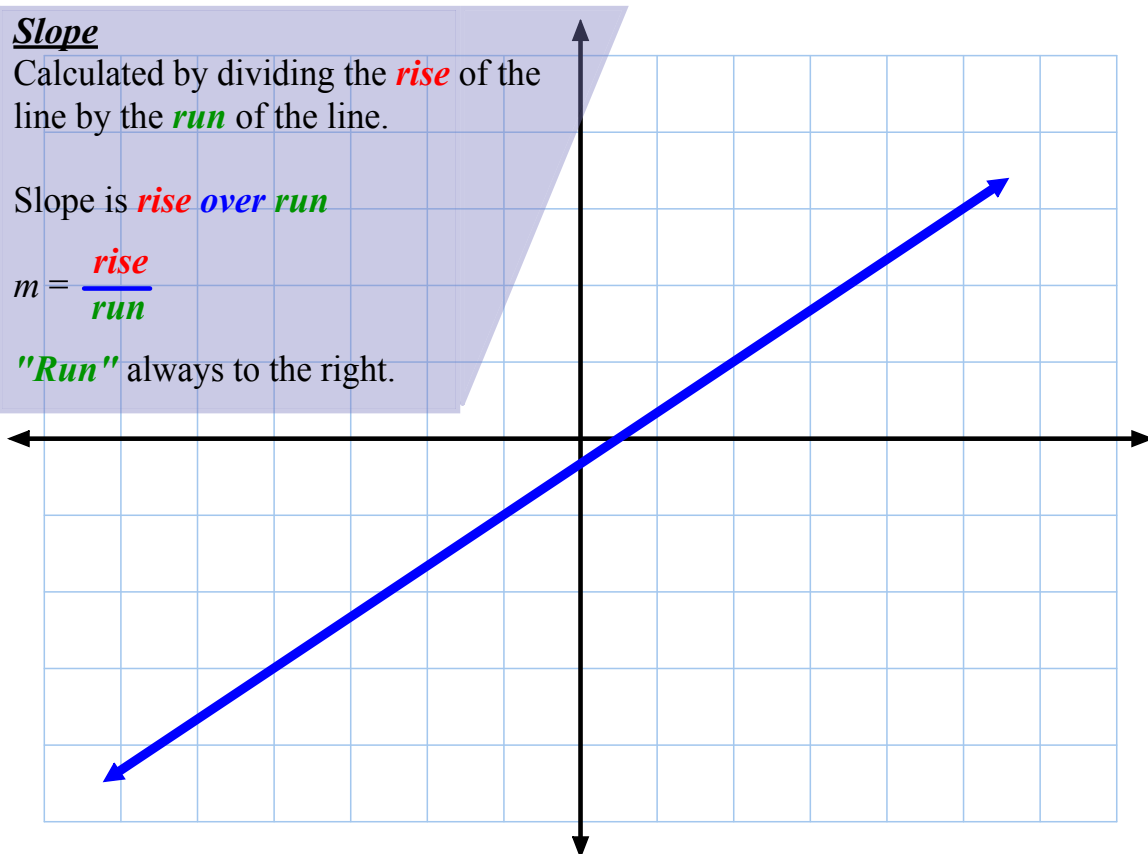
## Slope

Calculated by dividing the **rise** of the line by the **run** of the line.

Slope is **rise over run**

$$m = \frac{\text{rise}}{\text{run}}$$

"Run" always to the right.



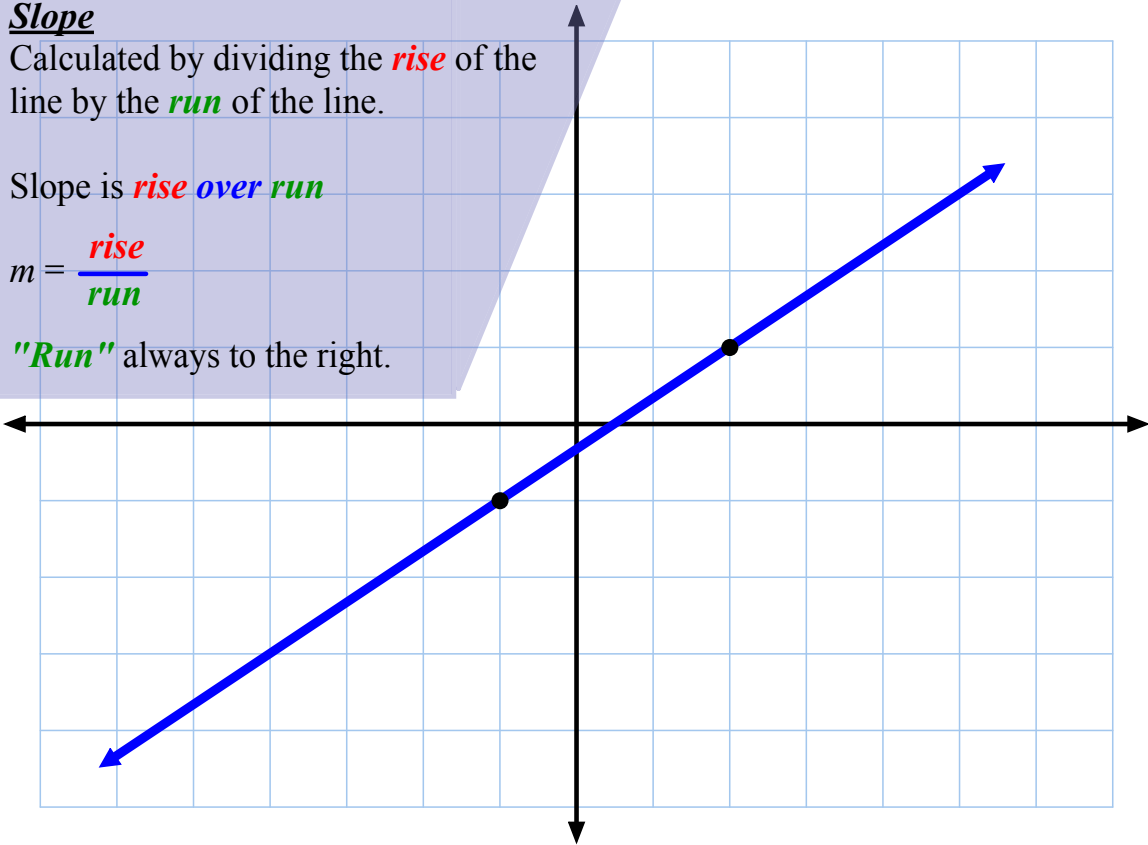
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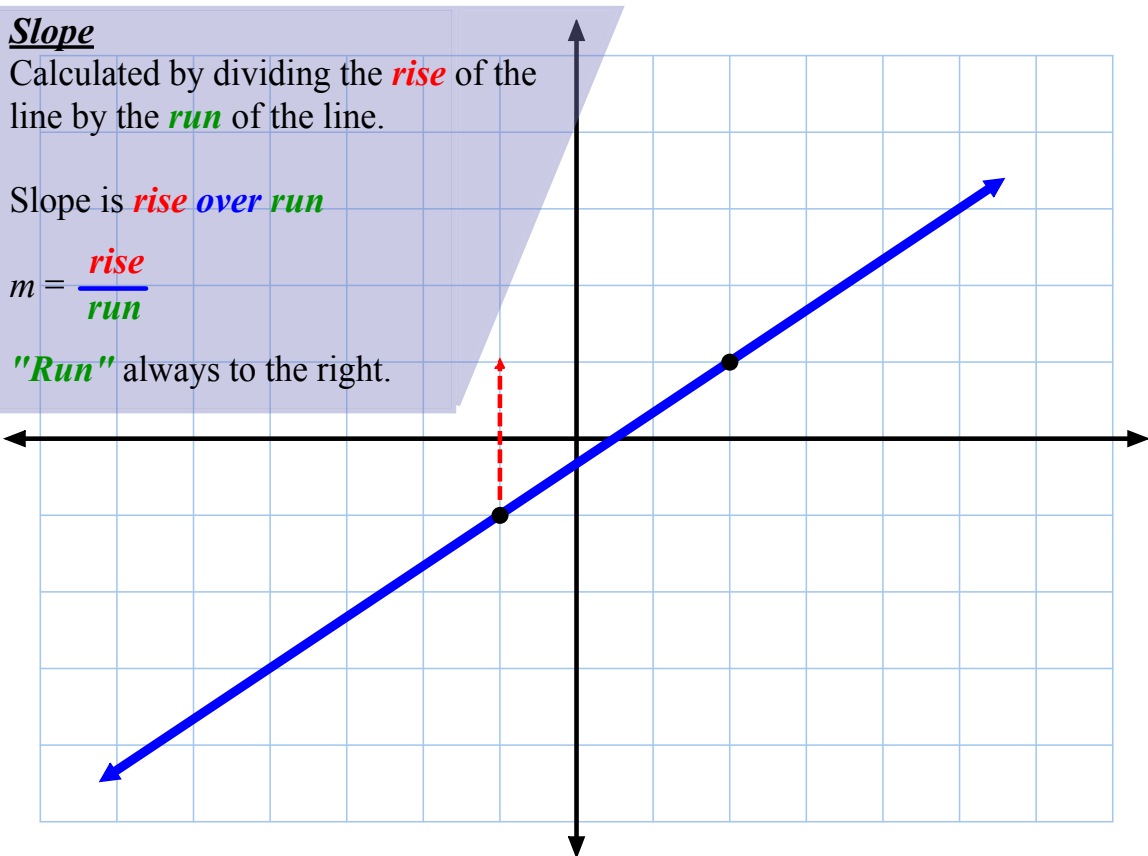
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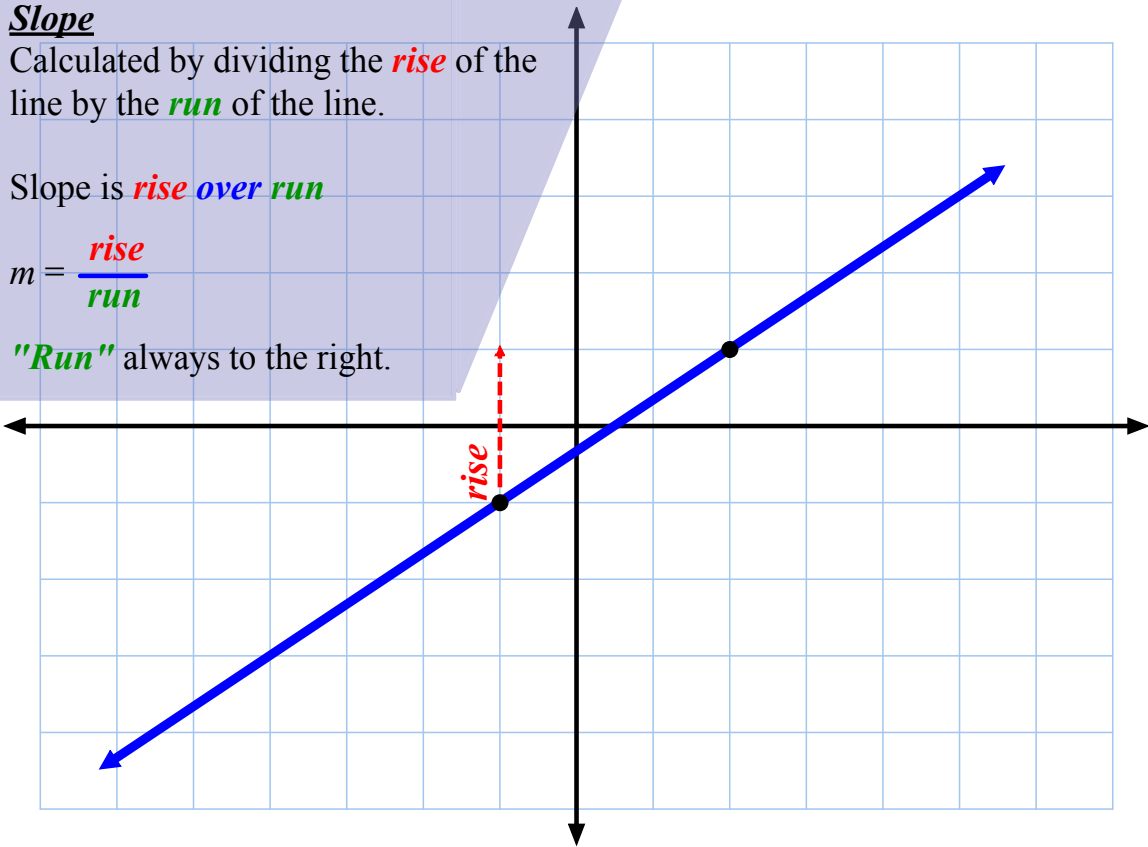
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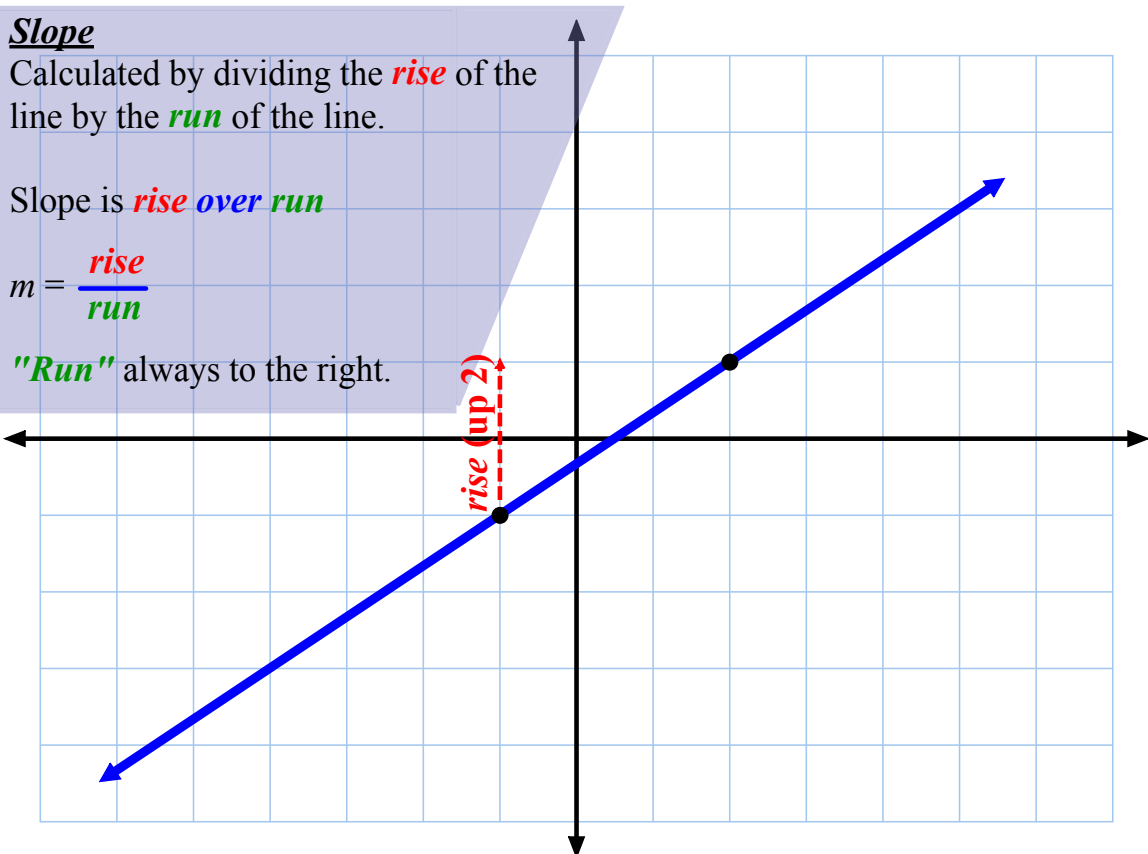
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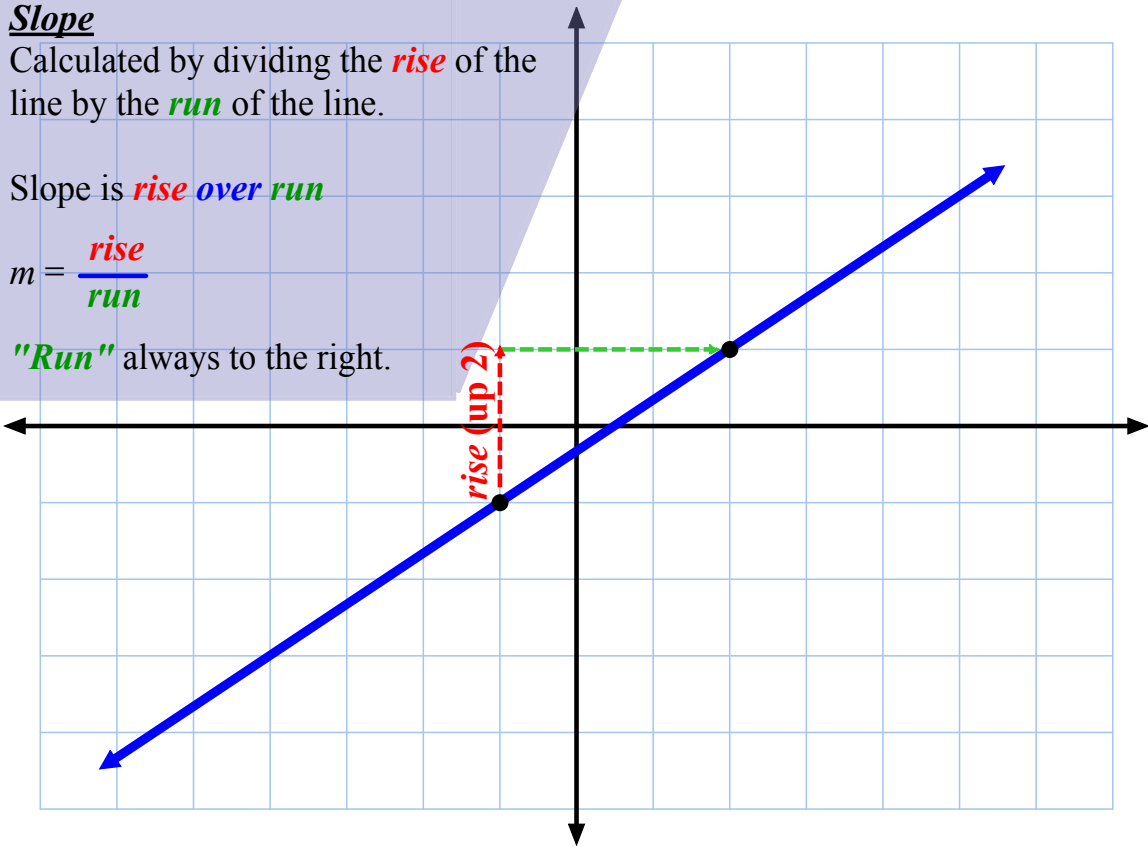
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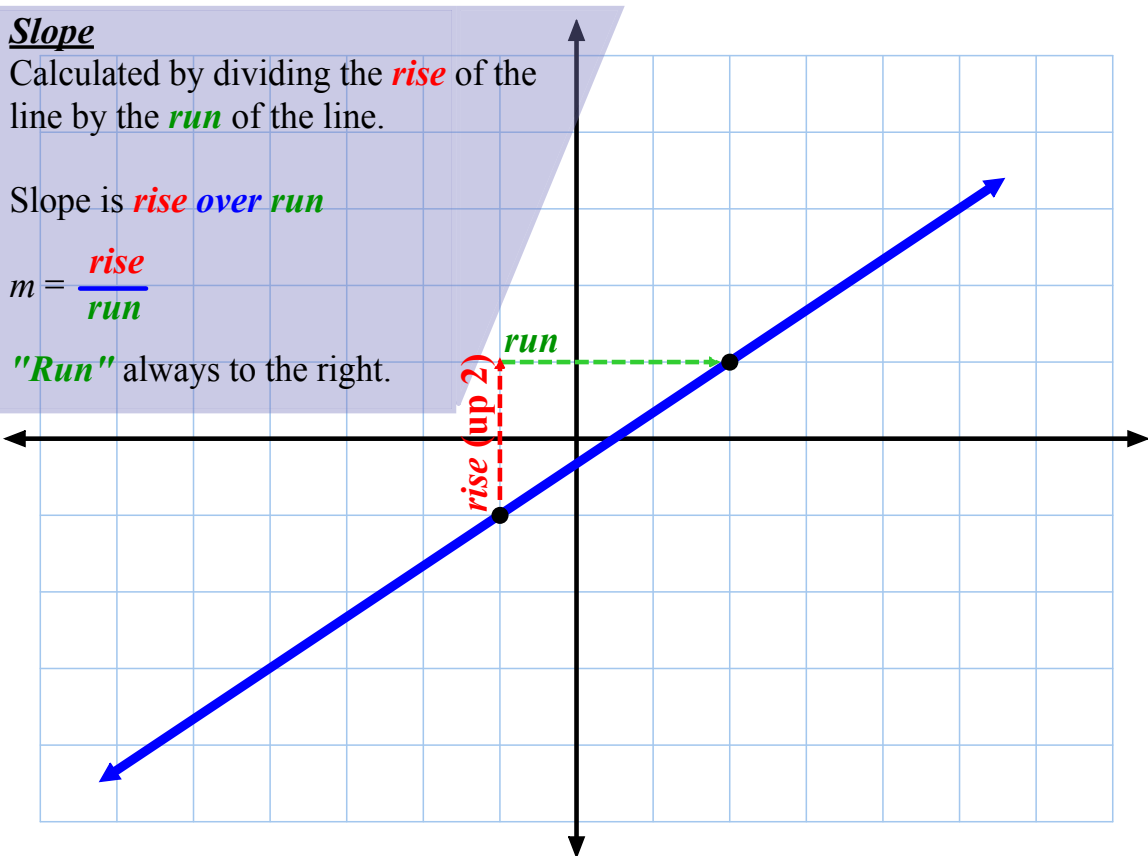
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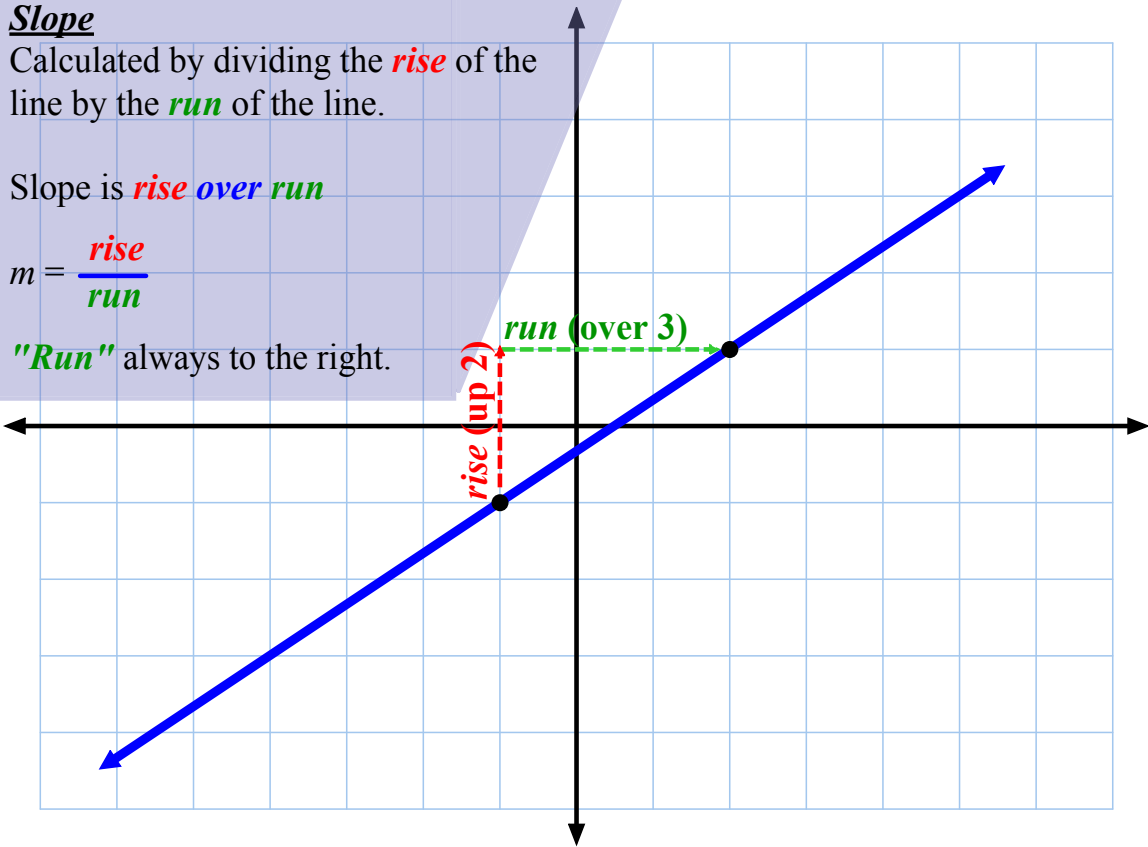
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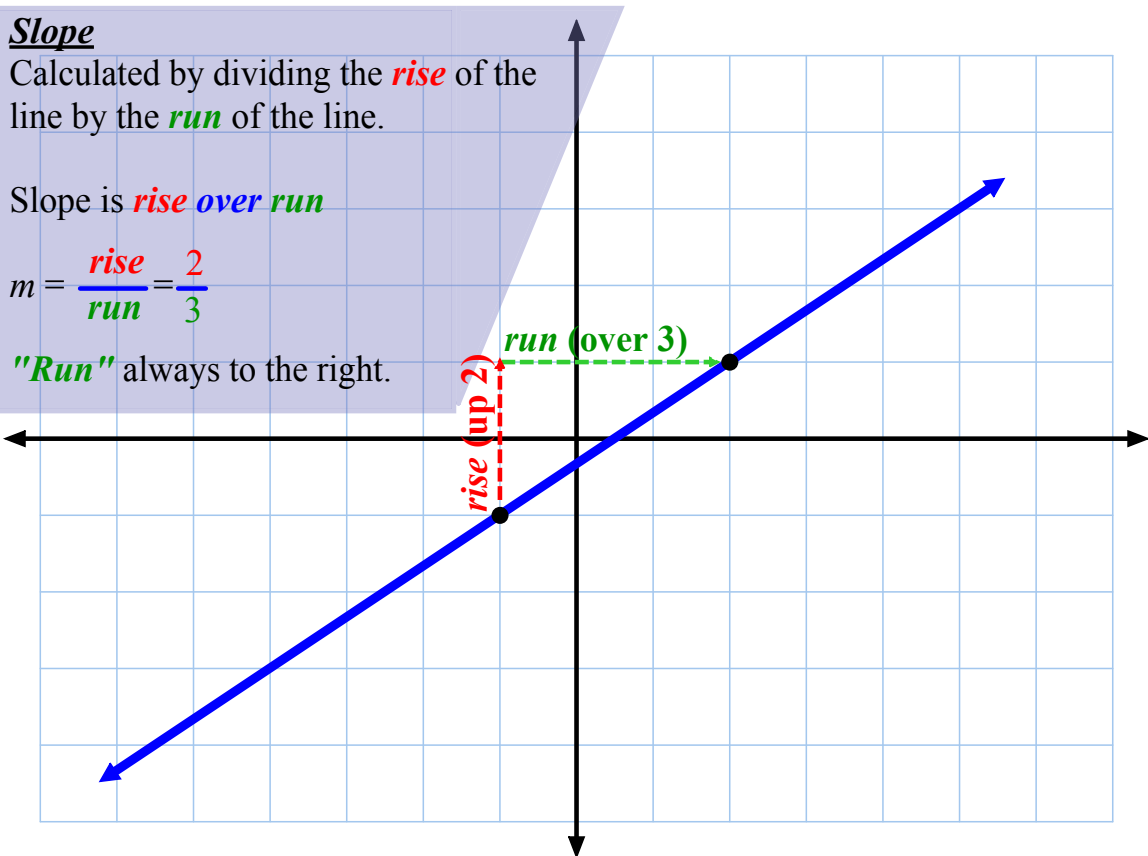
Slope

Calculated by dividing the *rise* of the line by the *run* of the line.

Slope is *rise over run*

$$m = \frac{\text{rise}}{\text{run}} = \frac{2}{3}$$

"Run" always to the right.





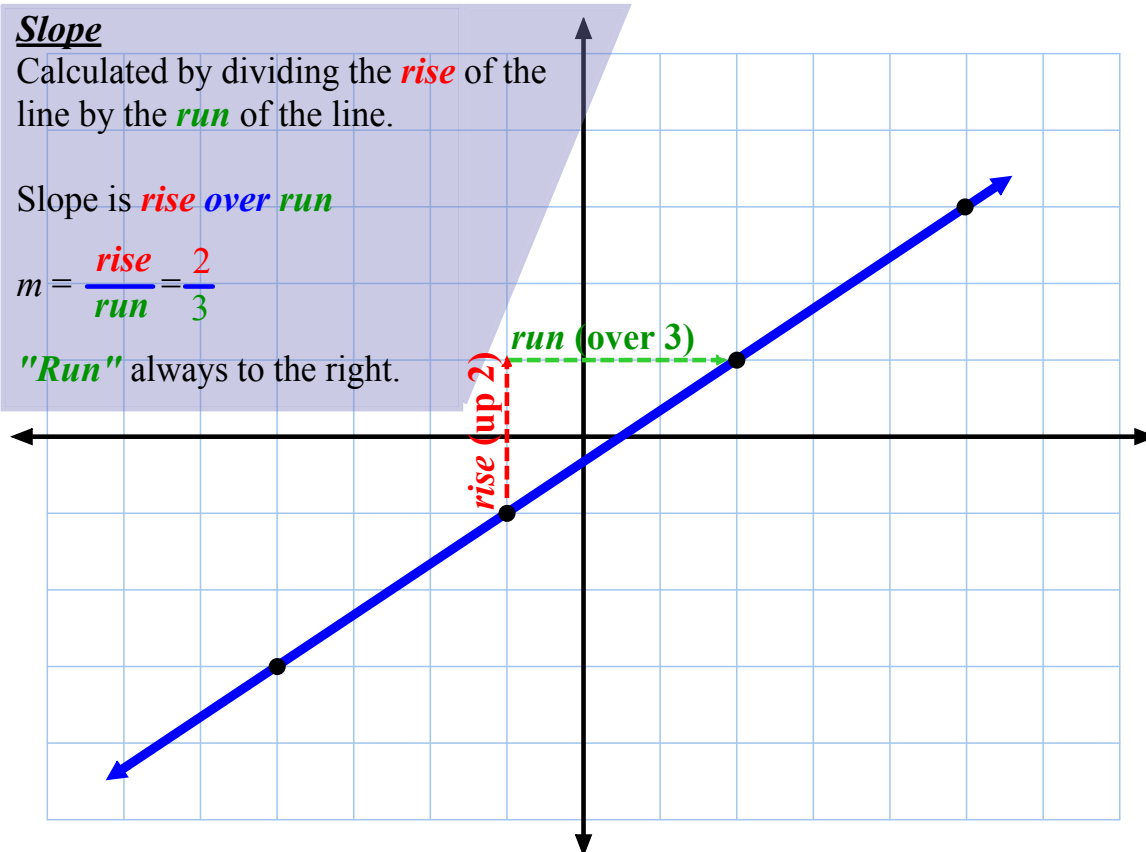
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"Run" always to the right.



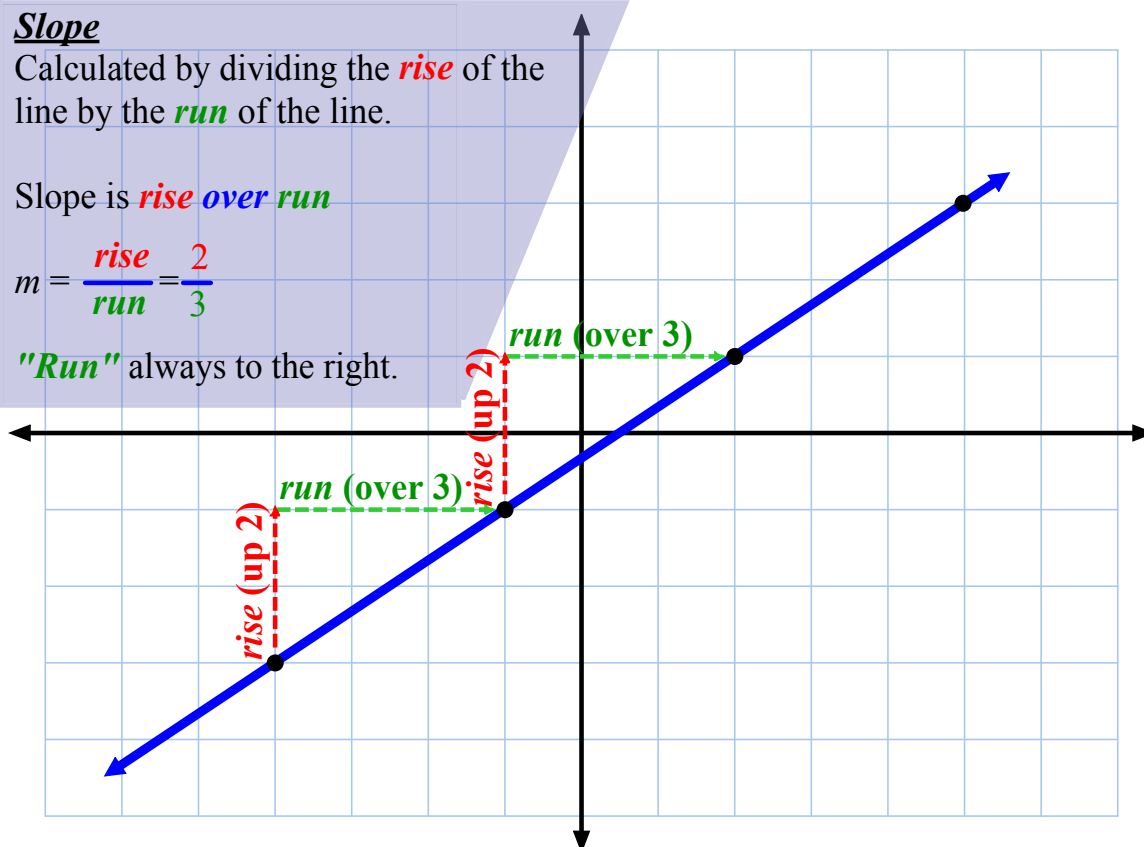
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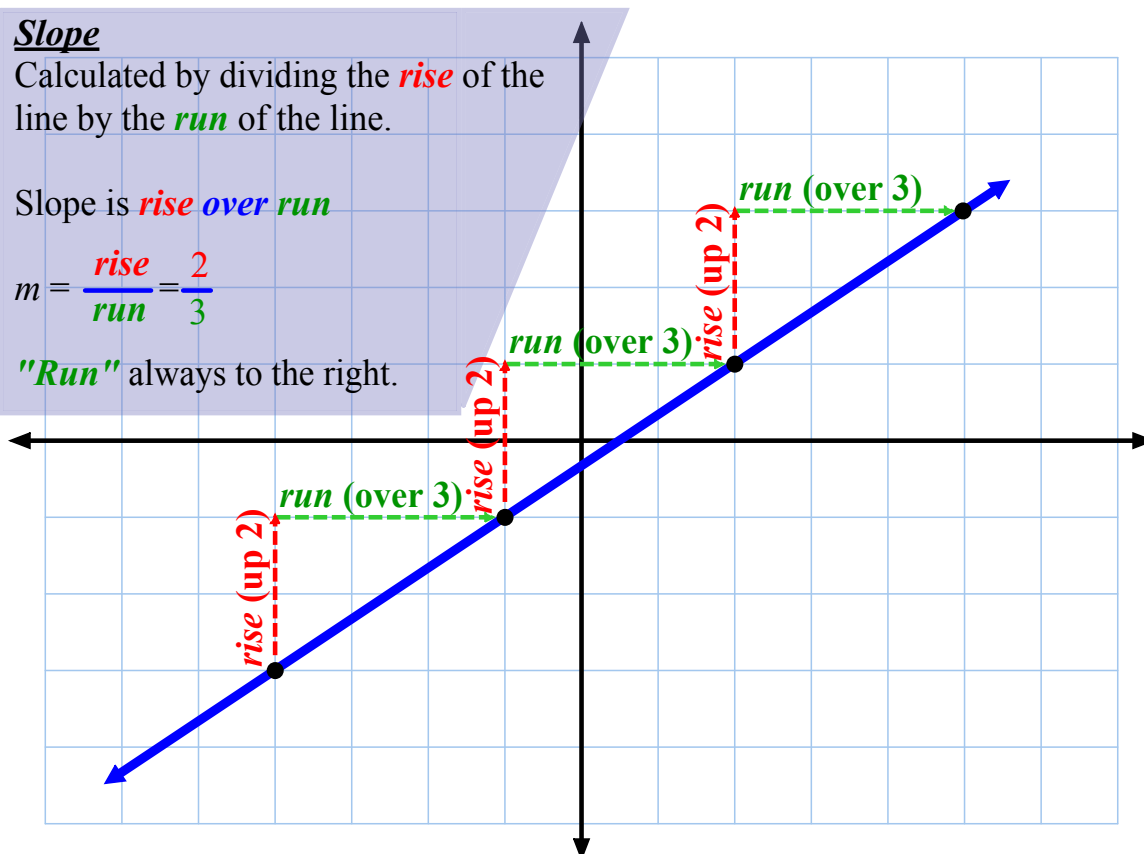
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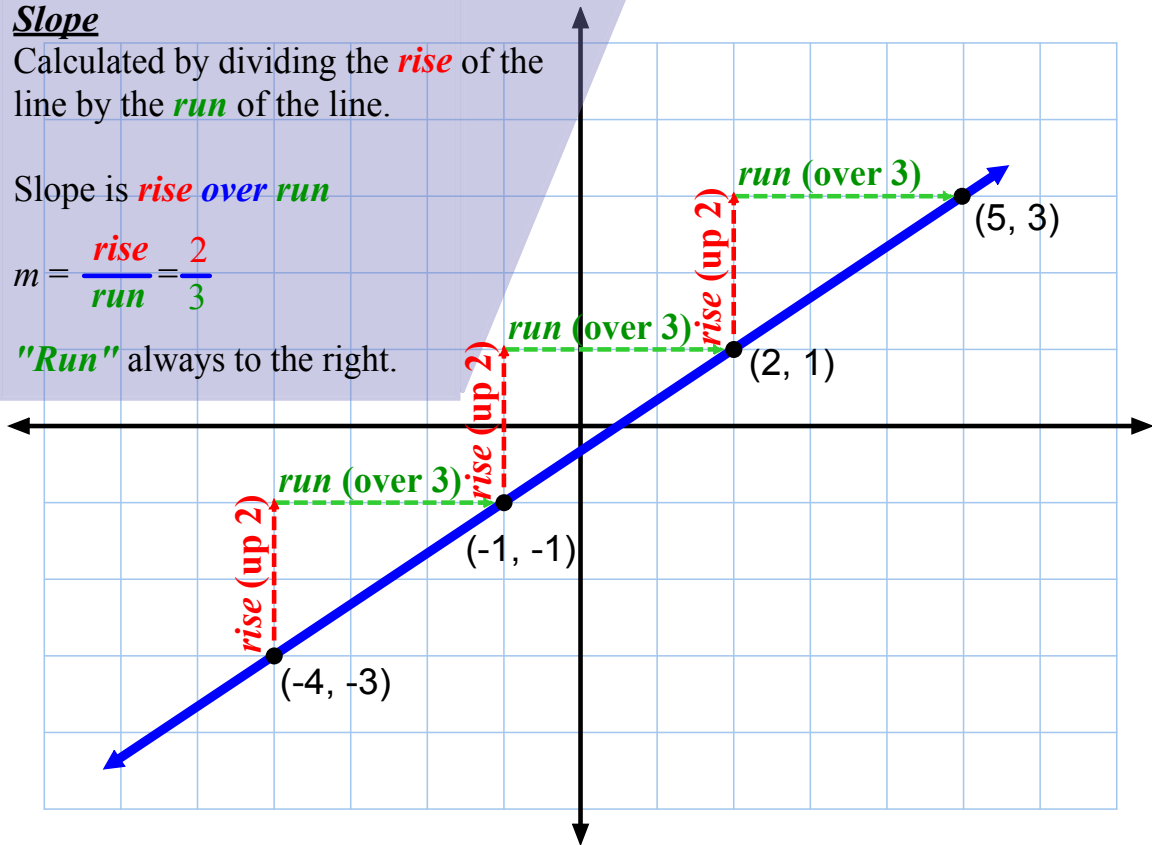
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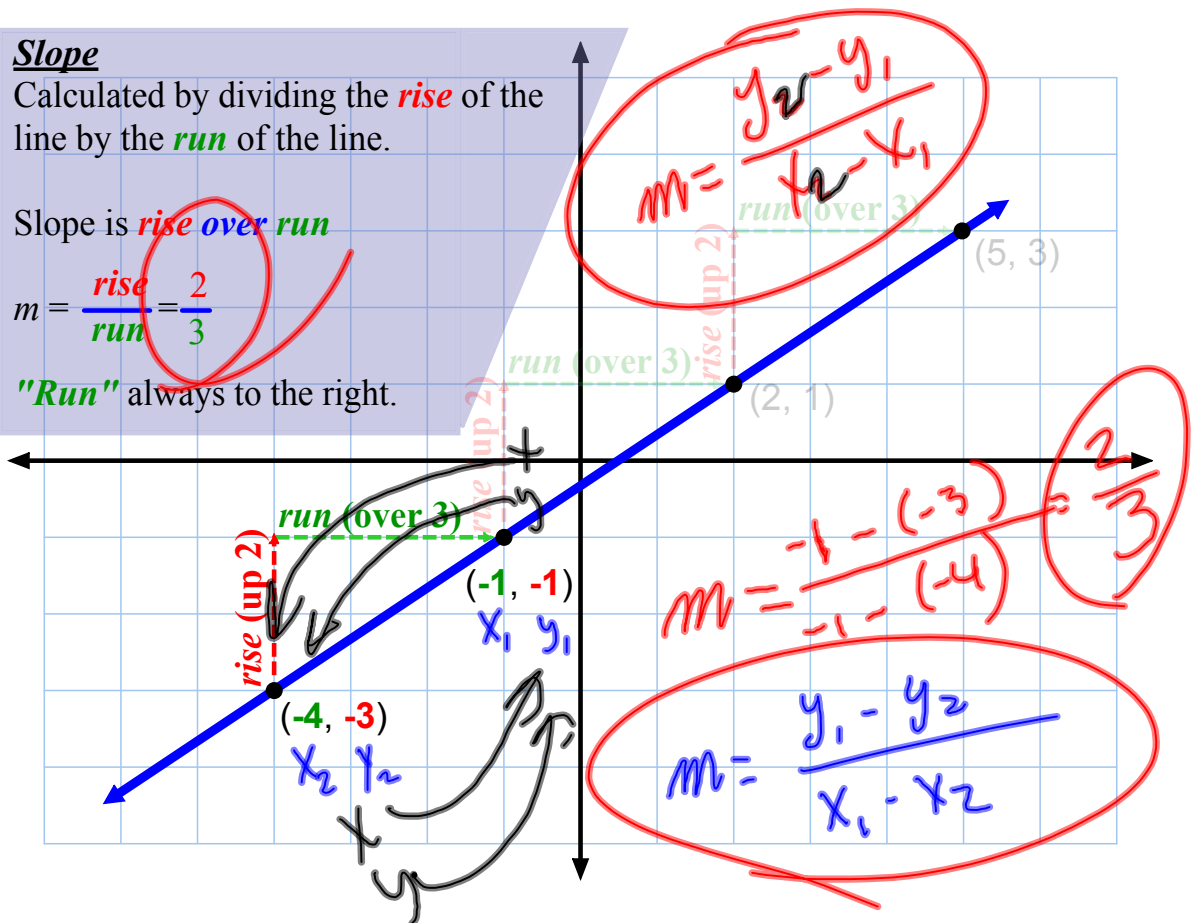
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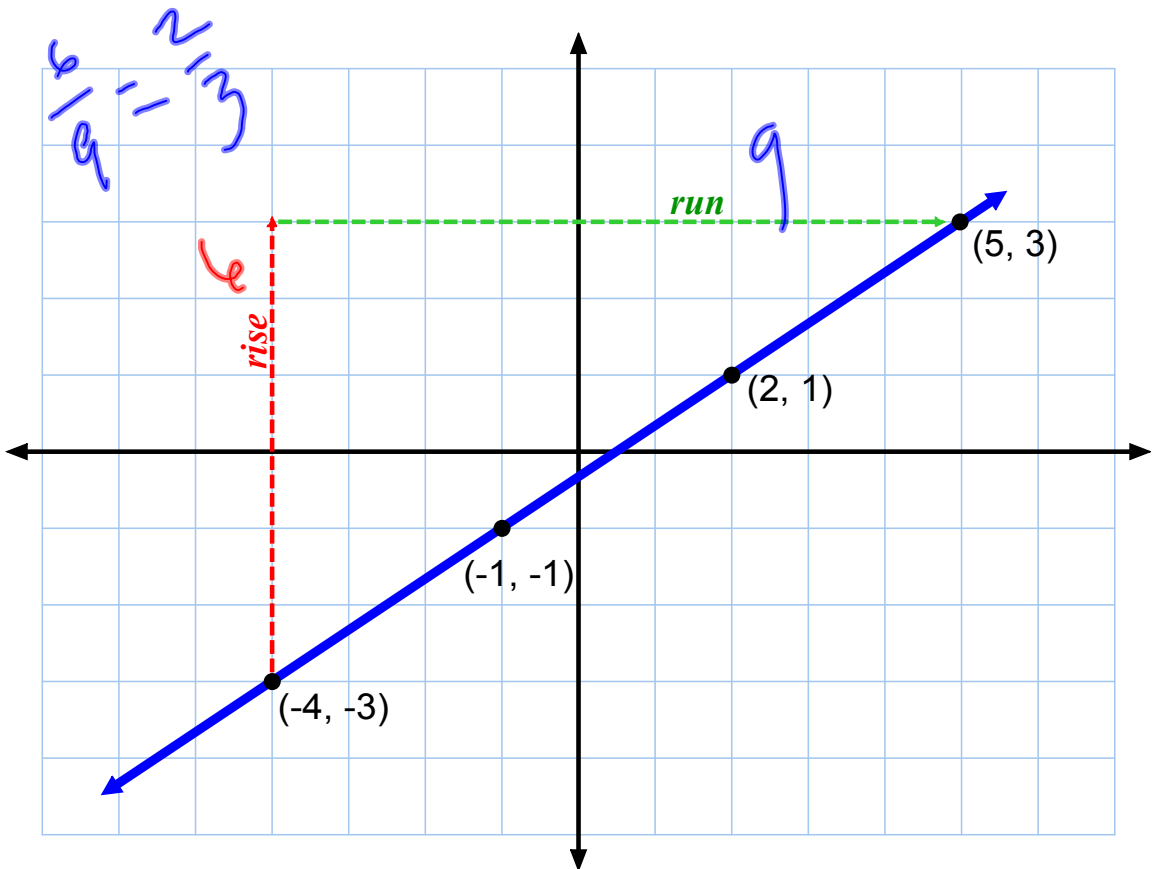
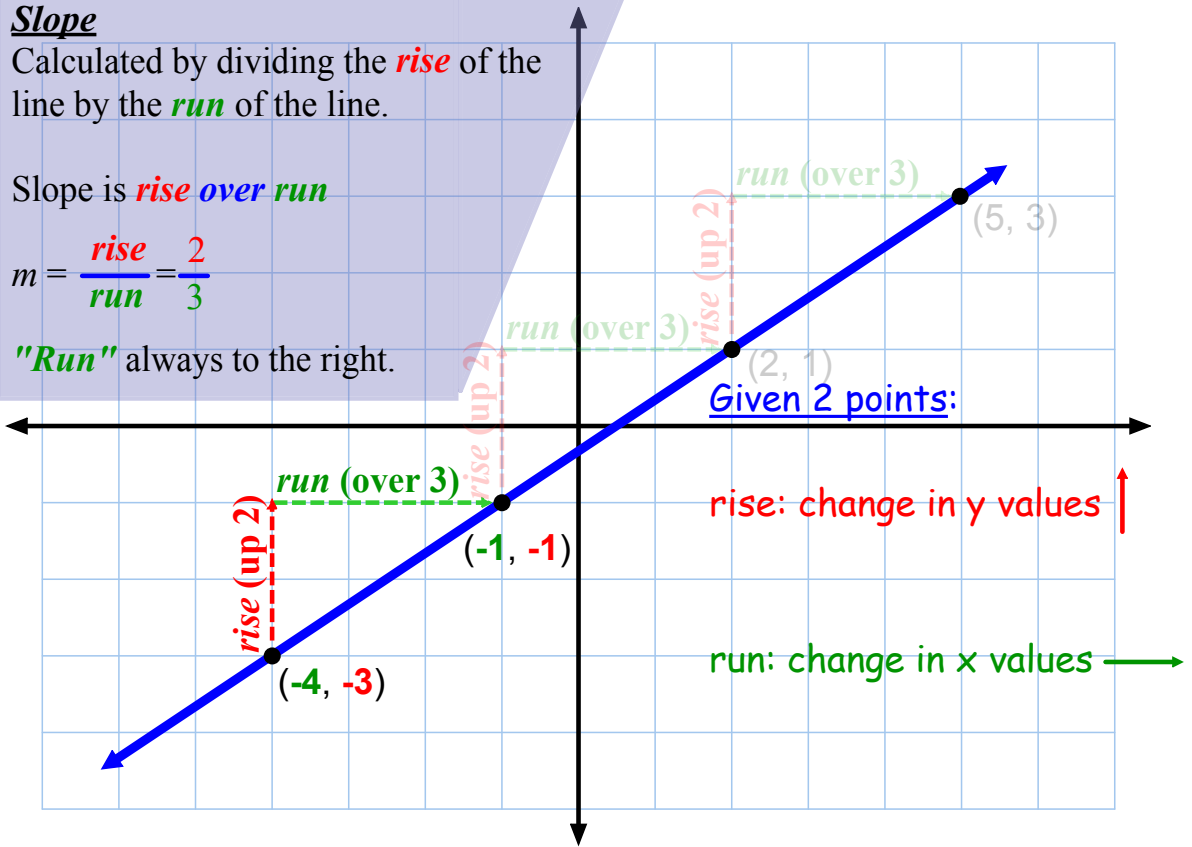
Slope

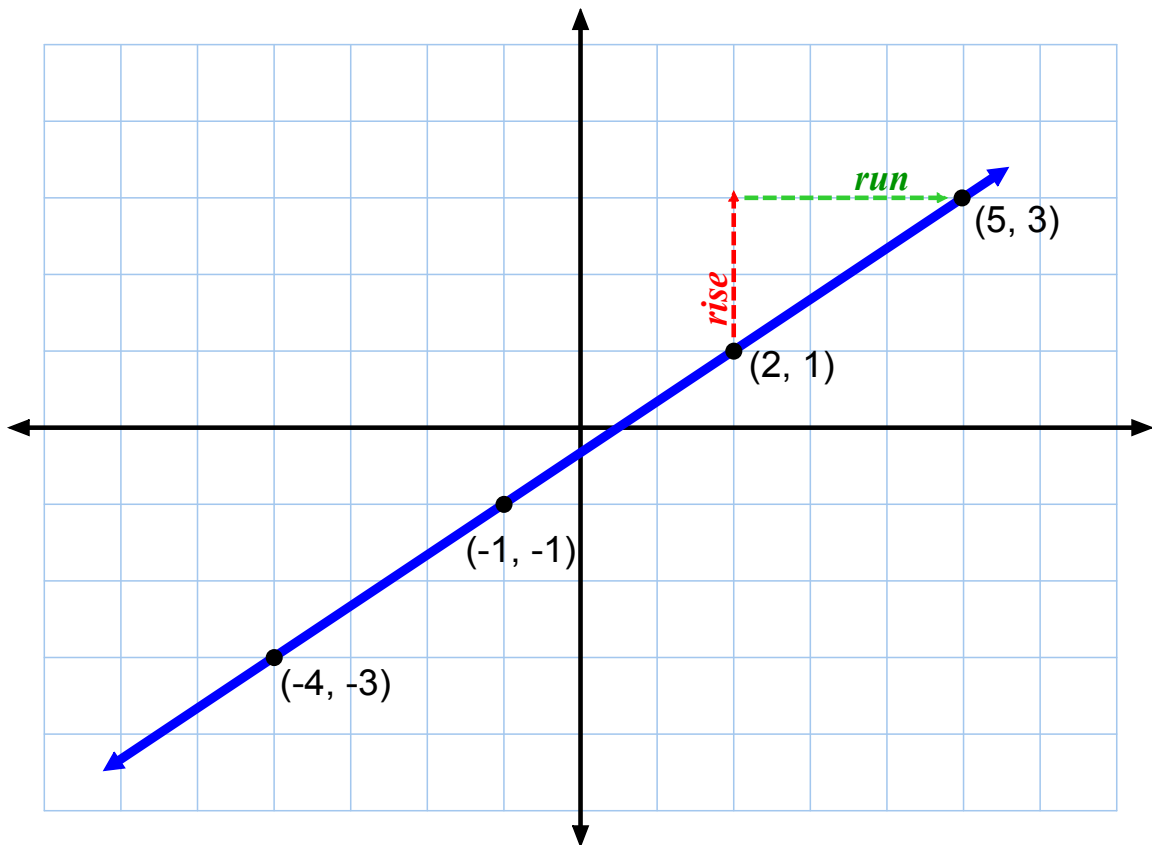
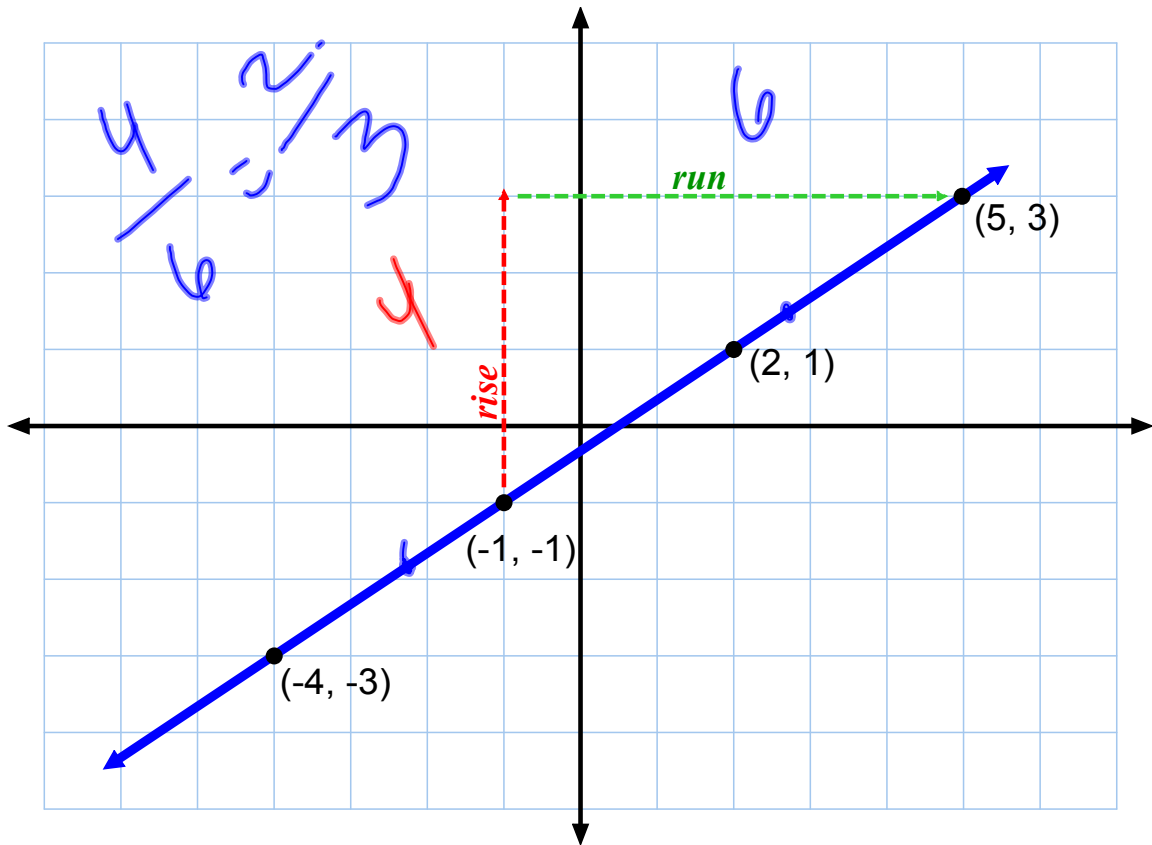
Calculated by dividing the *rise* of the line by the *run* of the line.

Slope is *rise over run*

$$m = \frac{\text{rise}}{\text{run}} = \frac{2}{3}$$

"Run" always to the right.





## Slope

Calculated by dividing the *ryse* of the line by the *run* of the line.

Slope is *ryse over run*

$$\text{Slope} = \frac{\textit{ryse}}{\textit{run}}$$

## Slope

Calculated by dividing the *ryse* of the line by the *run* of the line.

Slope is *ryse over run*

$$\text{Slope} = \frac{\textit{ryse}}{\textit{run}}$$

$$\frac{\textit{ryse}}{\textit{run}}$$

## Slope

Calculated by dividing the *ryse* of the line by the *run* of the line.

Slope is *ryse over run*

$$\text{Slope} = \frac{\text{ryse}}{\text{run}}$$

$$\frac{\text{ryse}}{\text{run}} = \frac{y_1 - y_2}{x_1 - x_2}$$

## Slope

Calculated by dividing the *ryse* of the line by the *run* of the line.

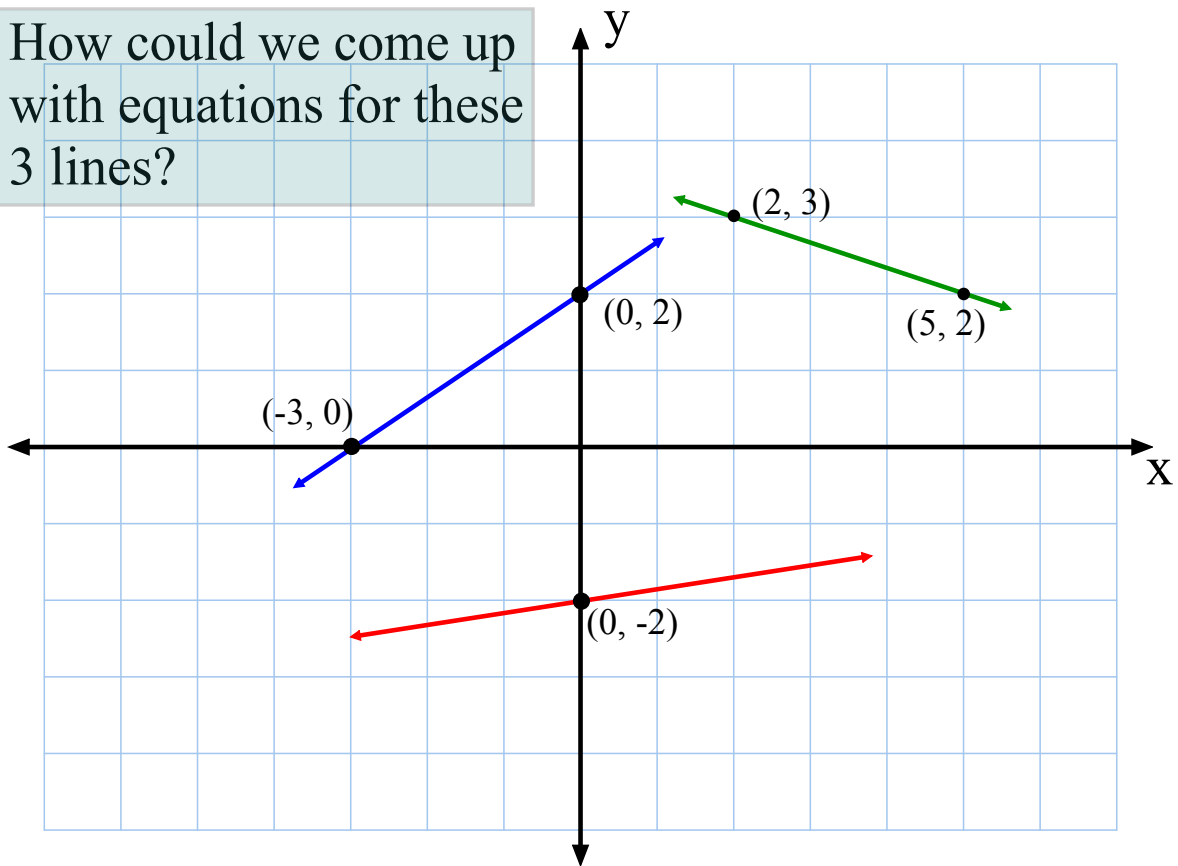
Slope is *ryse over run*

$$\text{Slope} = \frac{\text{ryse}}{\text{run}}$$

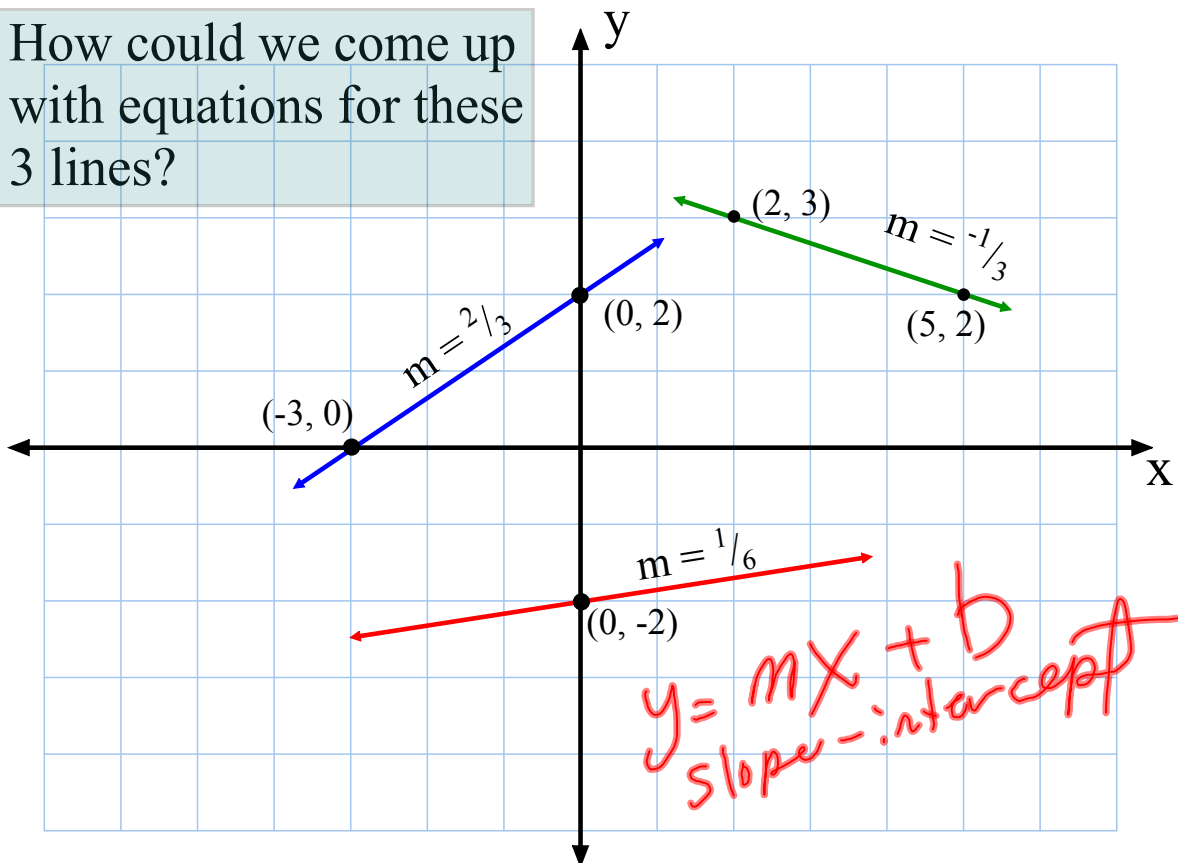
$$m = \frac{\text{ryse}}{\text{run}} = \frac{y_1 - y_2}{x_1 - x_2}$$



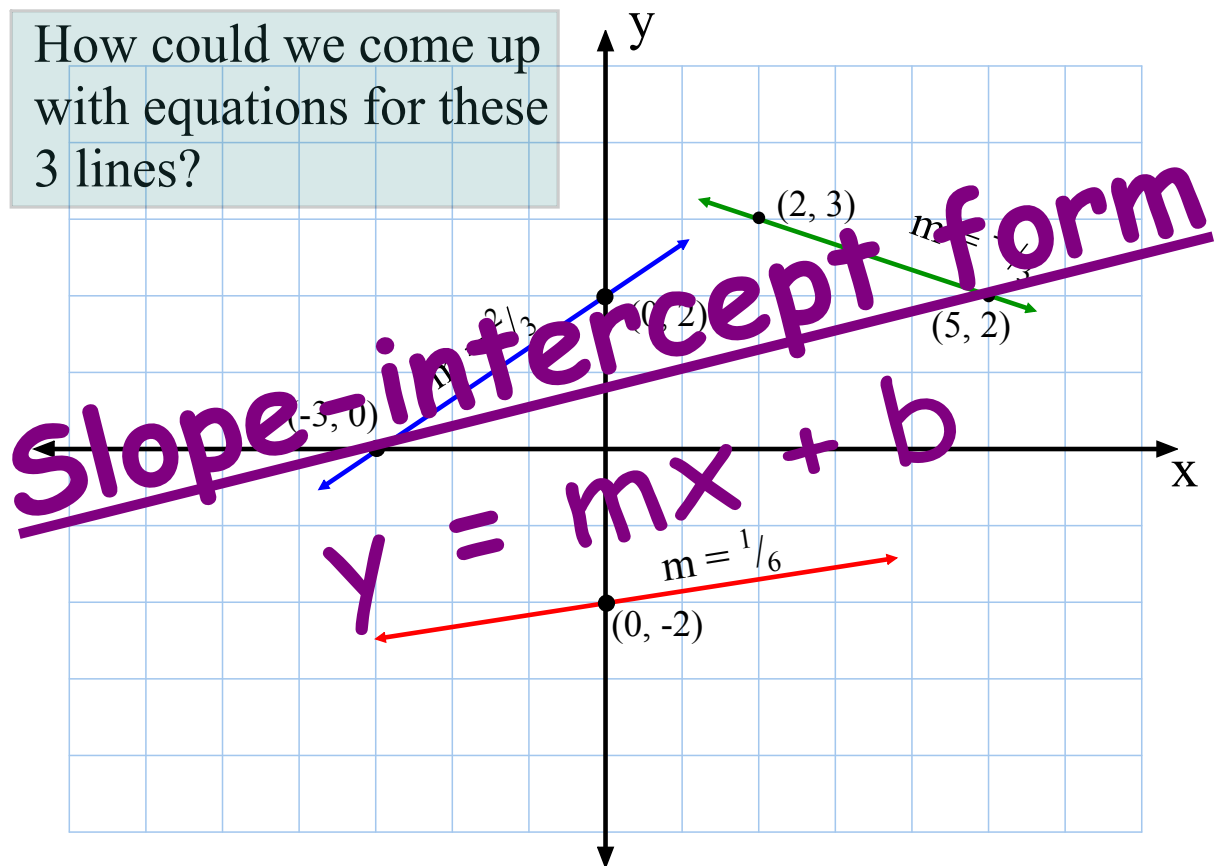
How could we come up with equations for these 3 lines?



How could we come up with equations for these 3 lines?



How could we come up with equations for these 3 lines?



### Intercept

The place a line crosses a given axis.

### y-intercept

Where the line crosses the y axis.

### x-intercept

Where the line crosses the x axis.

*Slope-intercept form*

$$y = mx + b$$

*Slope-intercept form*

$$y = mx + b$$

*Slope-intercept form*

$$y = mx + b$$

*slope*





*Slope-intercept form*

$$y = mx + b$$

*slope*

*y-intercept*



Slope-intercept form

$$y = mx + b$$

*slope* (red dashed arrow pointing to  $m$ )  
*y-intercept* (blue dashed arrow pointing to  $b$ )

$$y = 2x - 1$$

Slope-intercept form

$$y = mx + b$$

*slope* (red dashed arrow pointing to  $m$ )  
*y-intercept* (blue dashed arrow pointing to  $b$ )

$$y = 2x - 1$$

(The number 2 is red and the number 1 is blue)

Slope-intercept form

$$y = mx + b$$

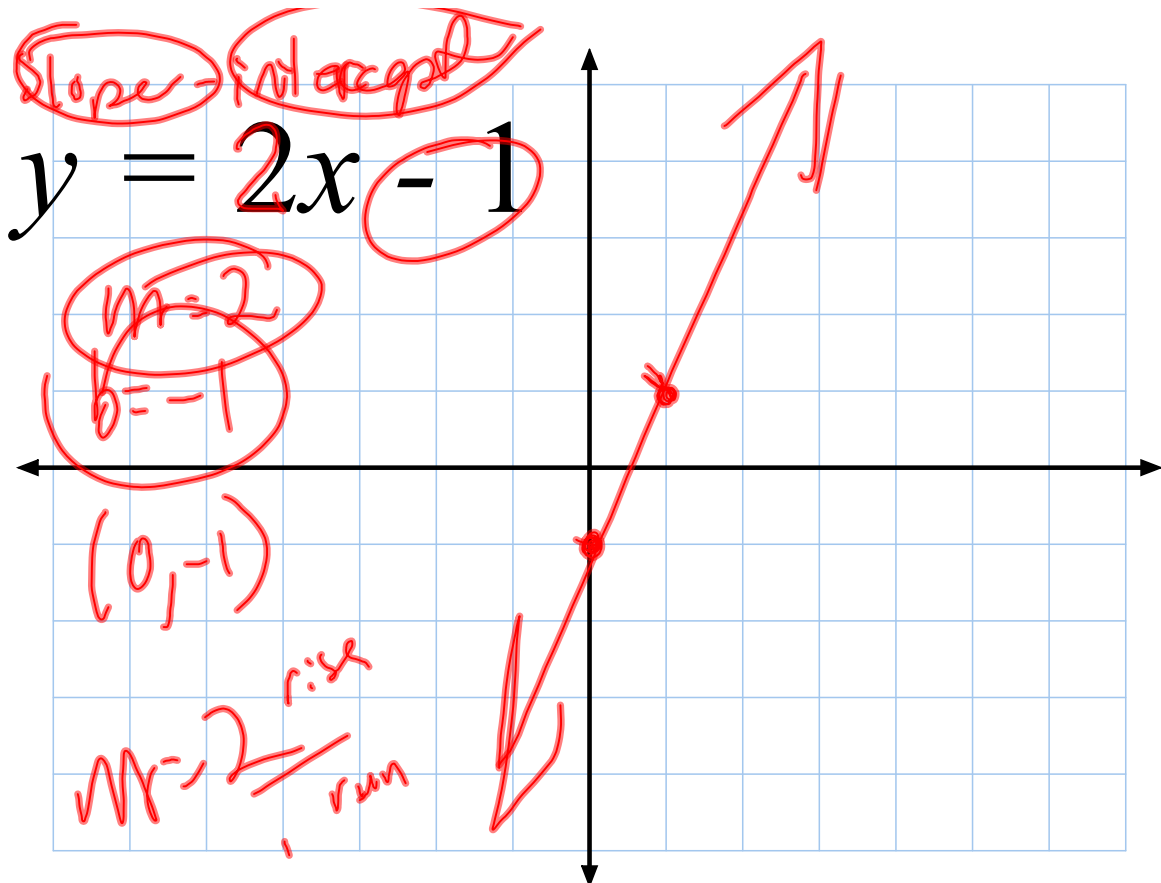
slope

y-intercept

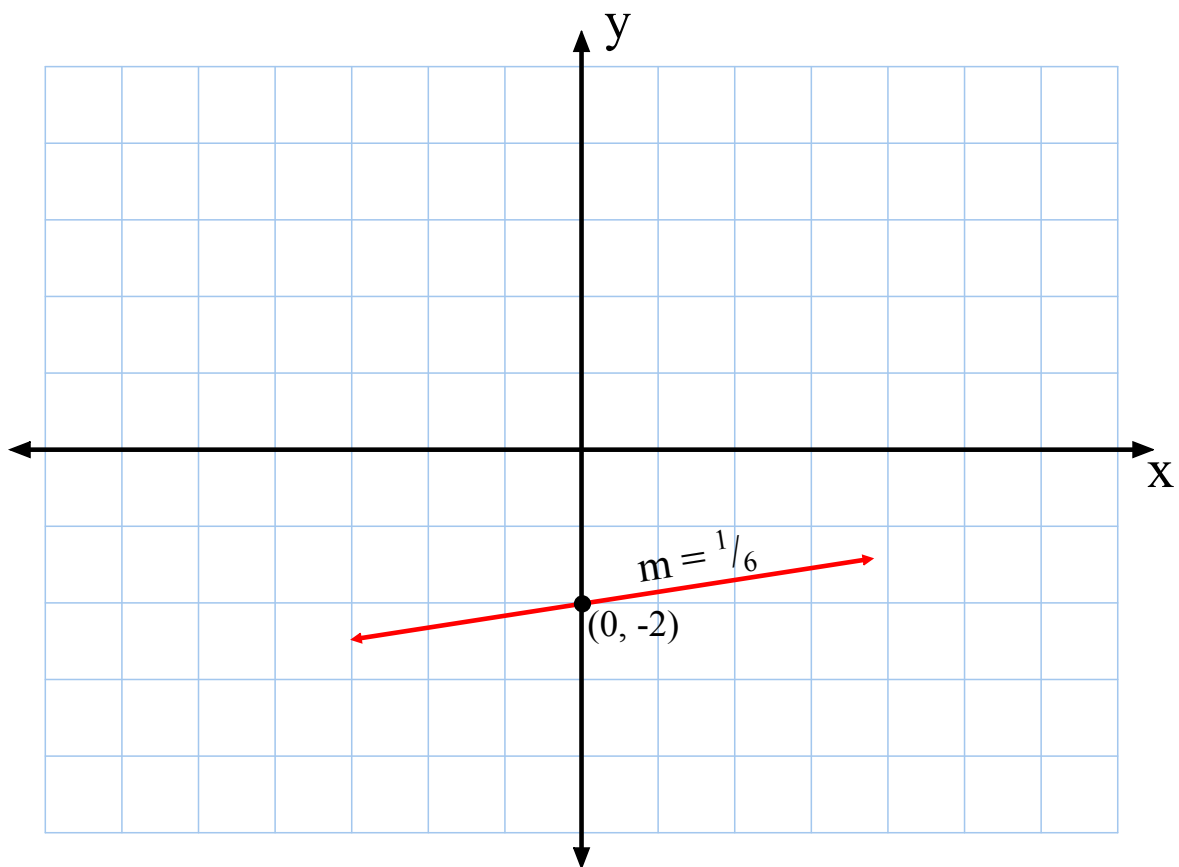
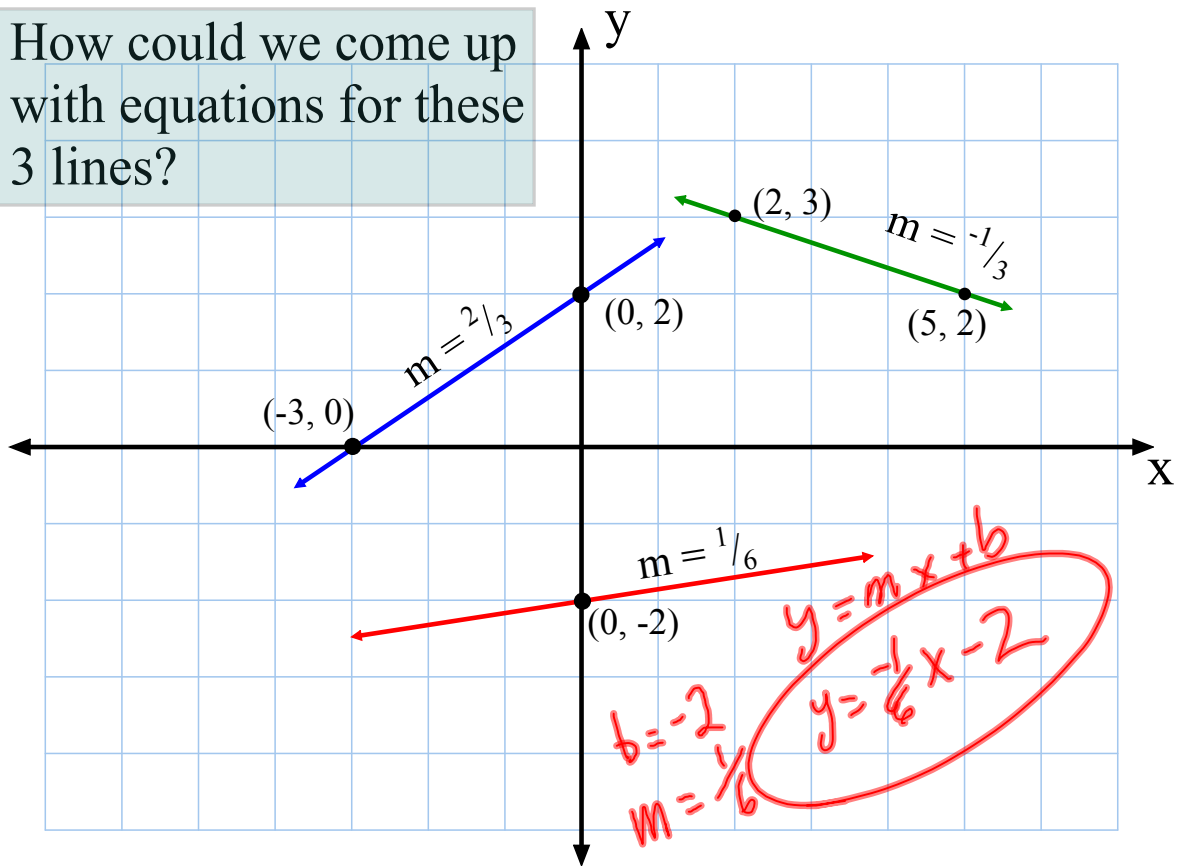
$$y = 2x - 1$$

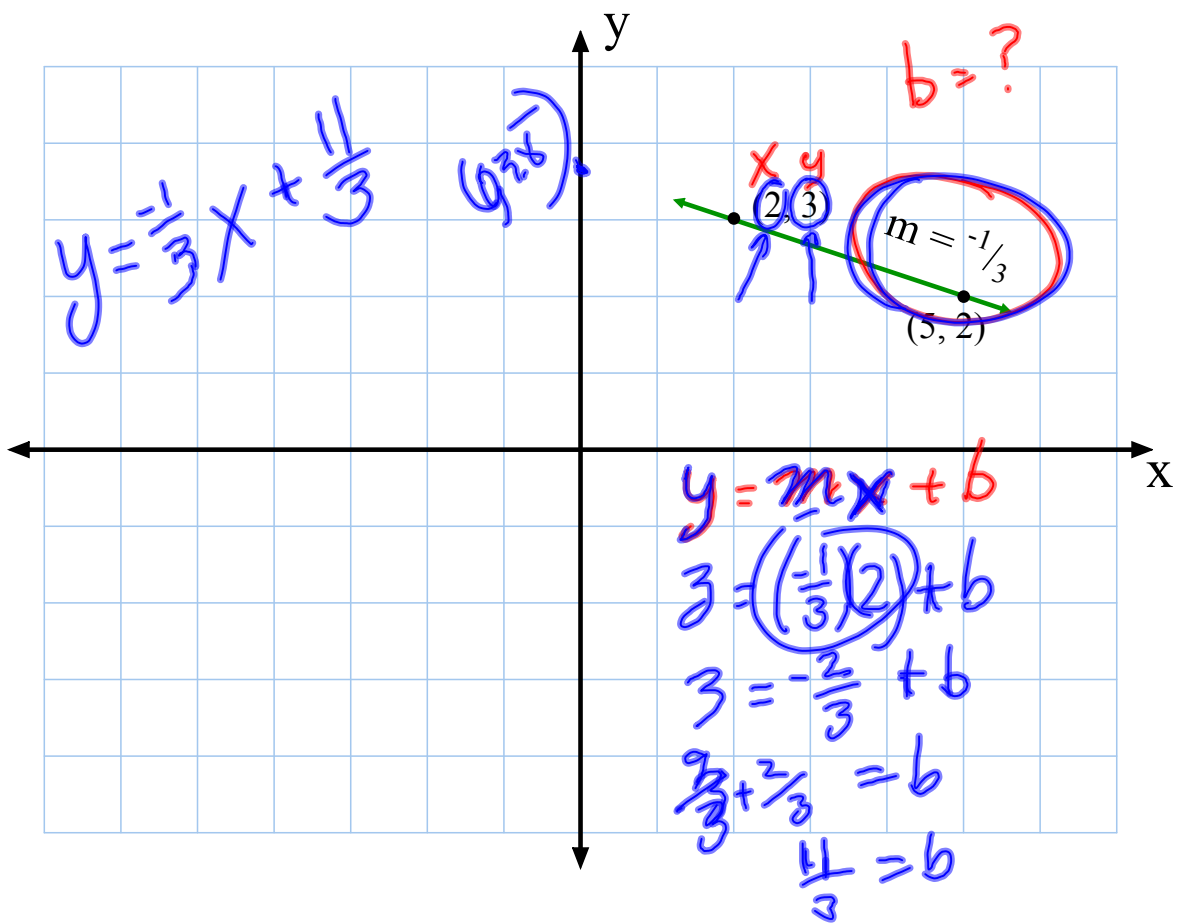
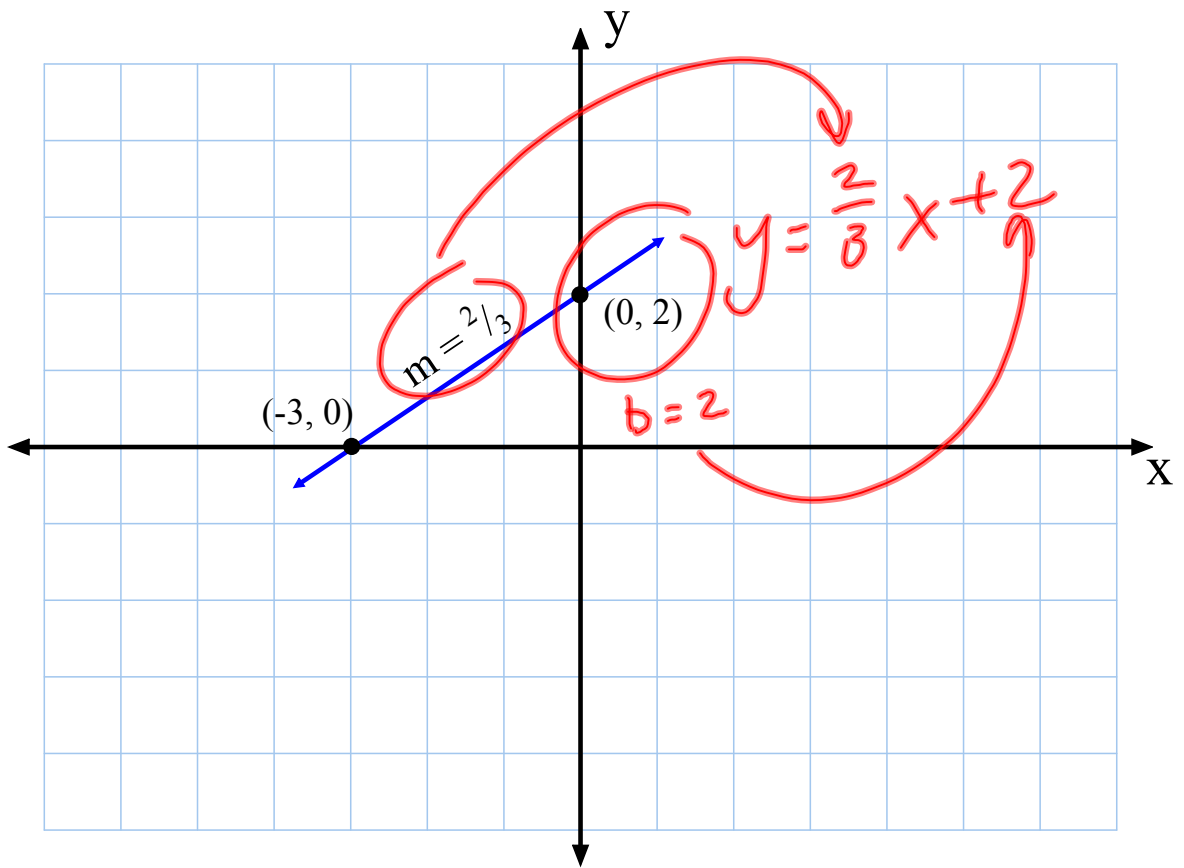
$$m = 2$$

$$b = -1$$

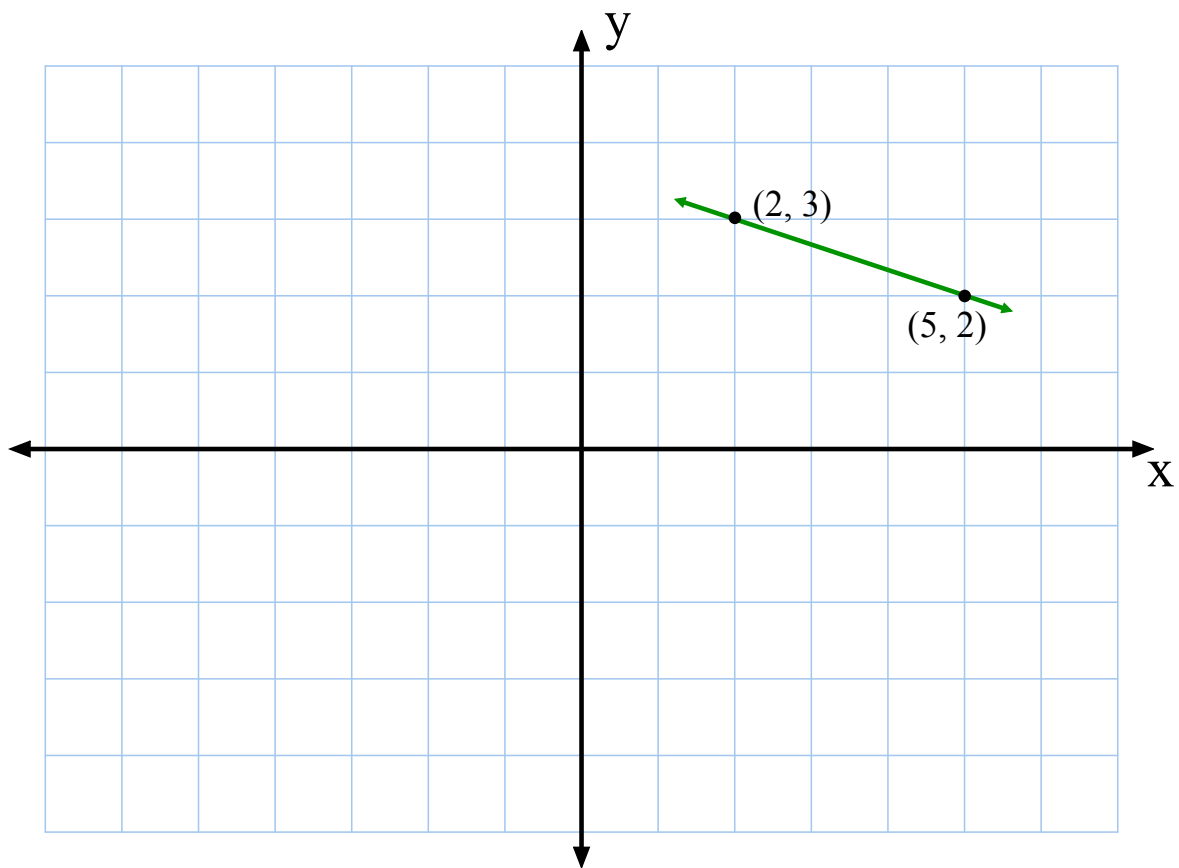


How could we come up with equations for these 3 lines?

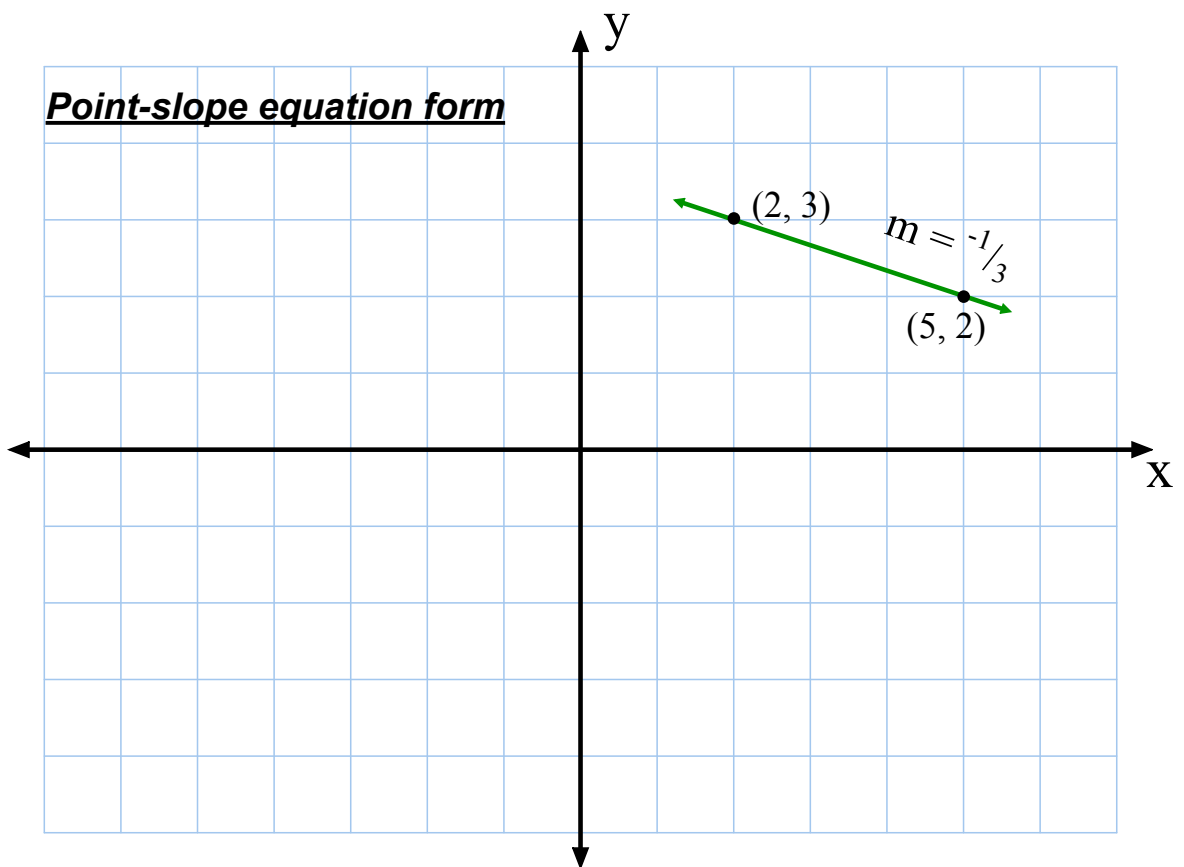
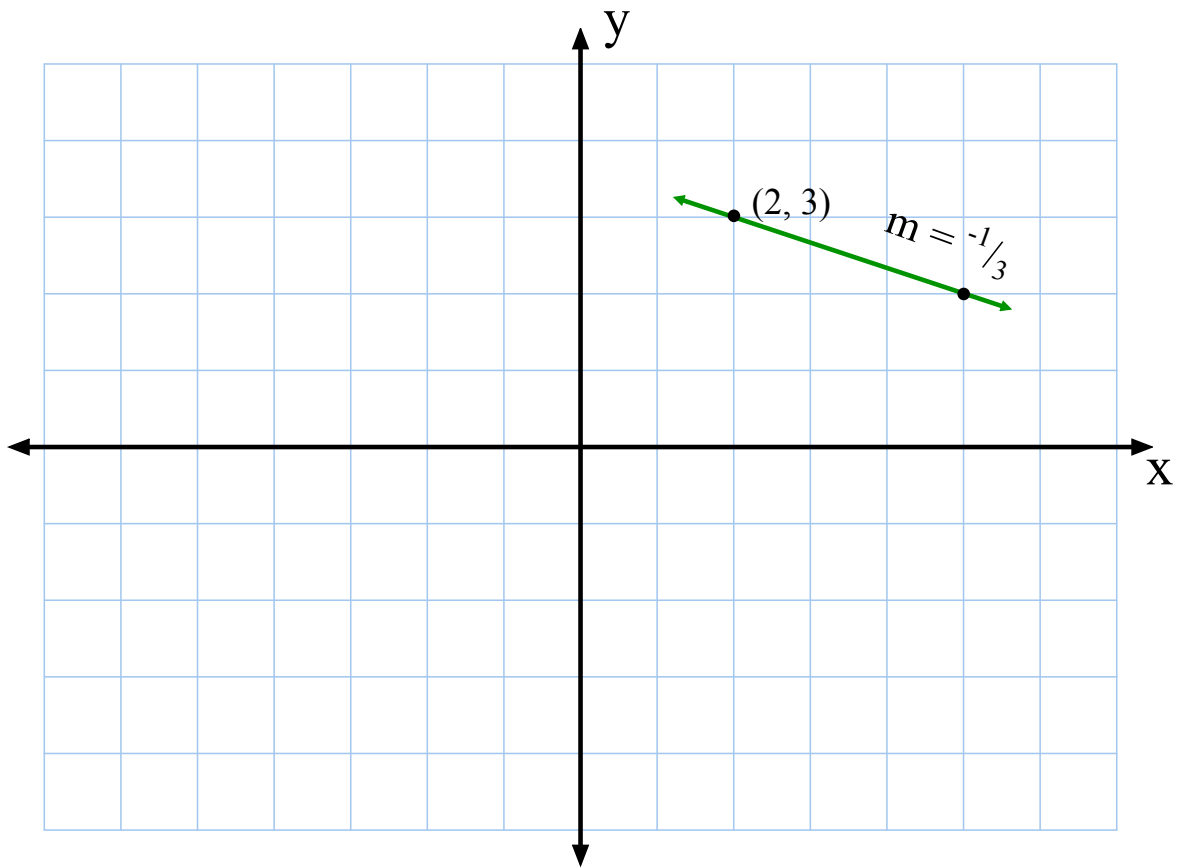


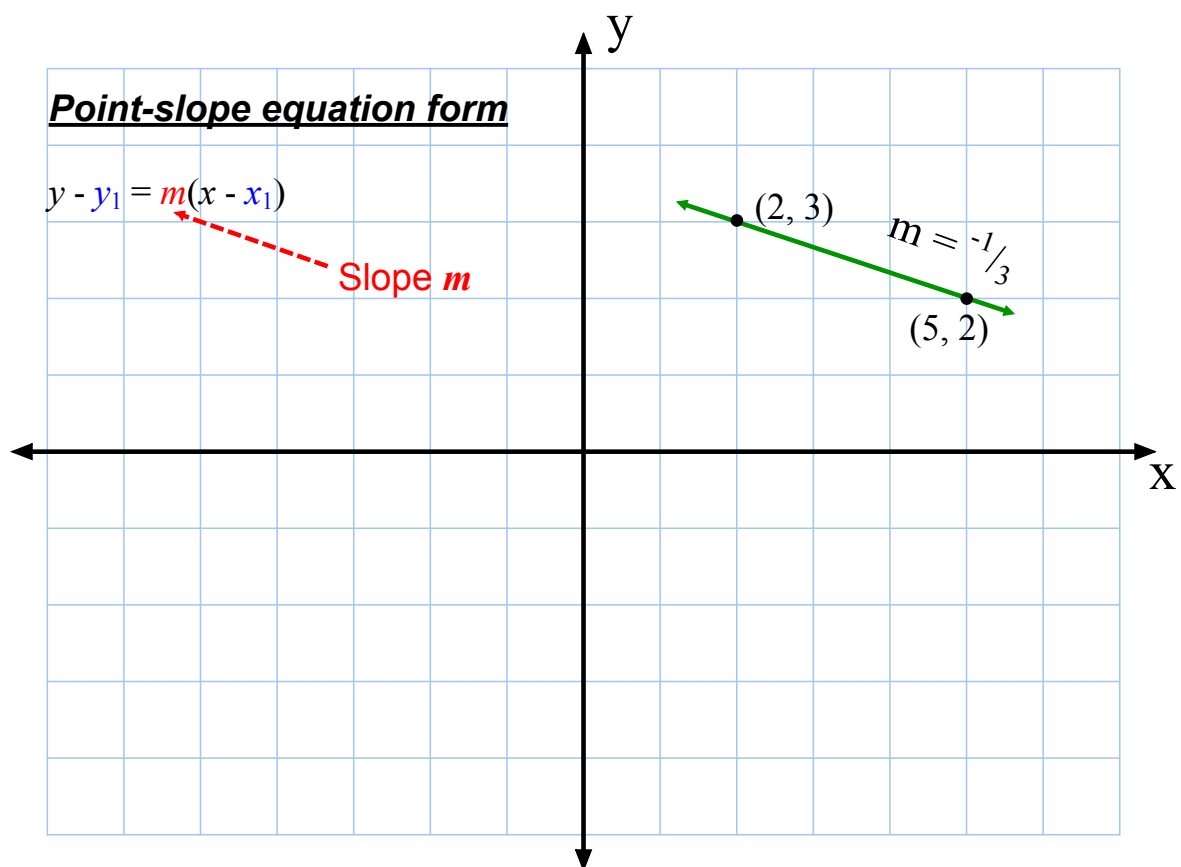
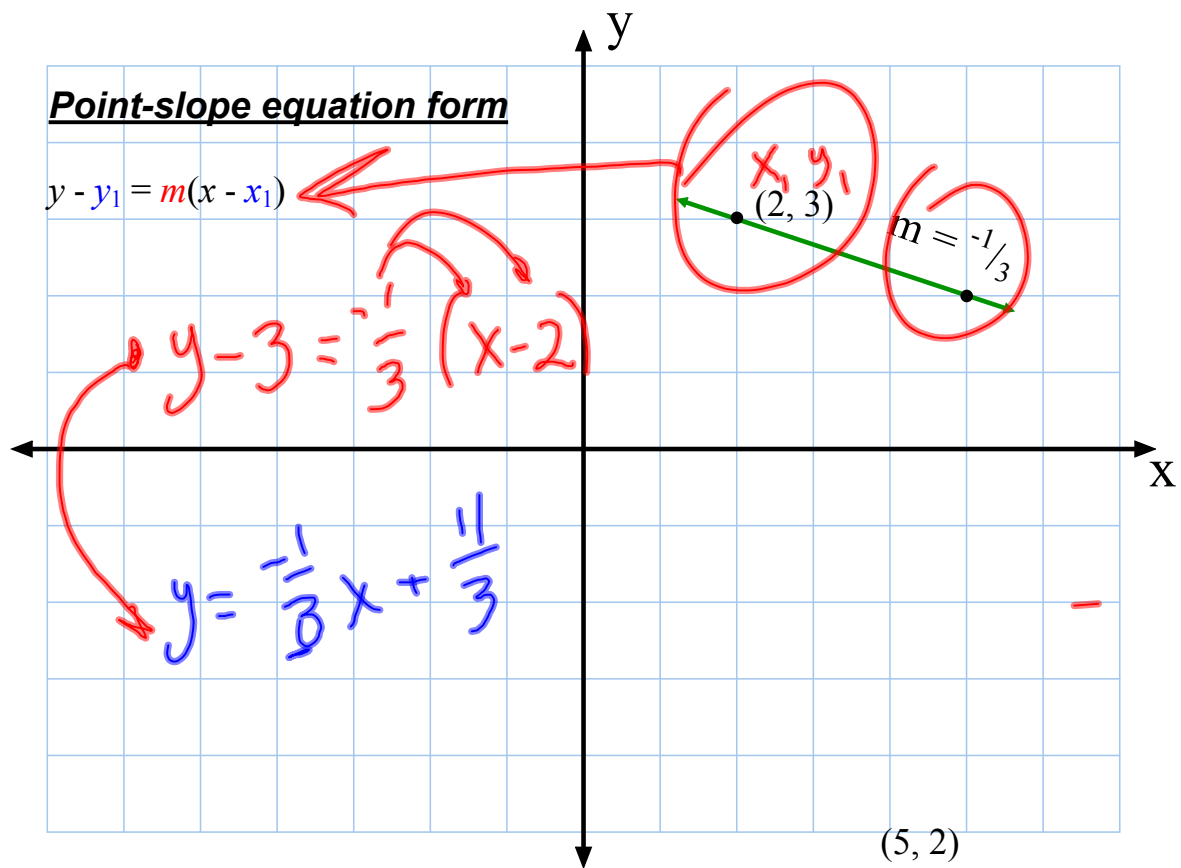


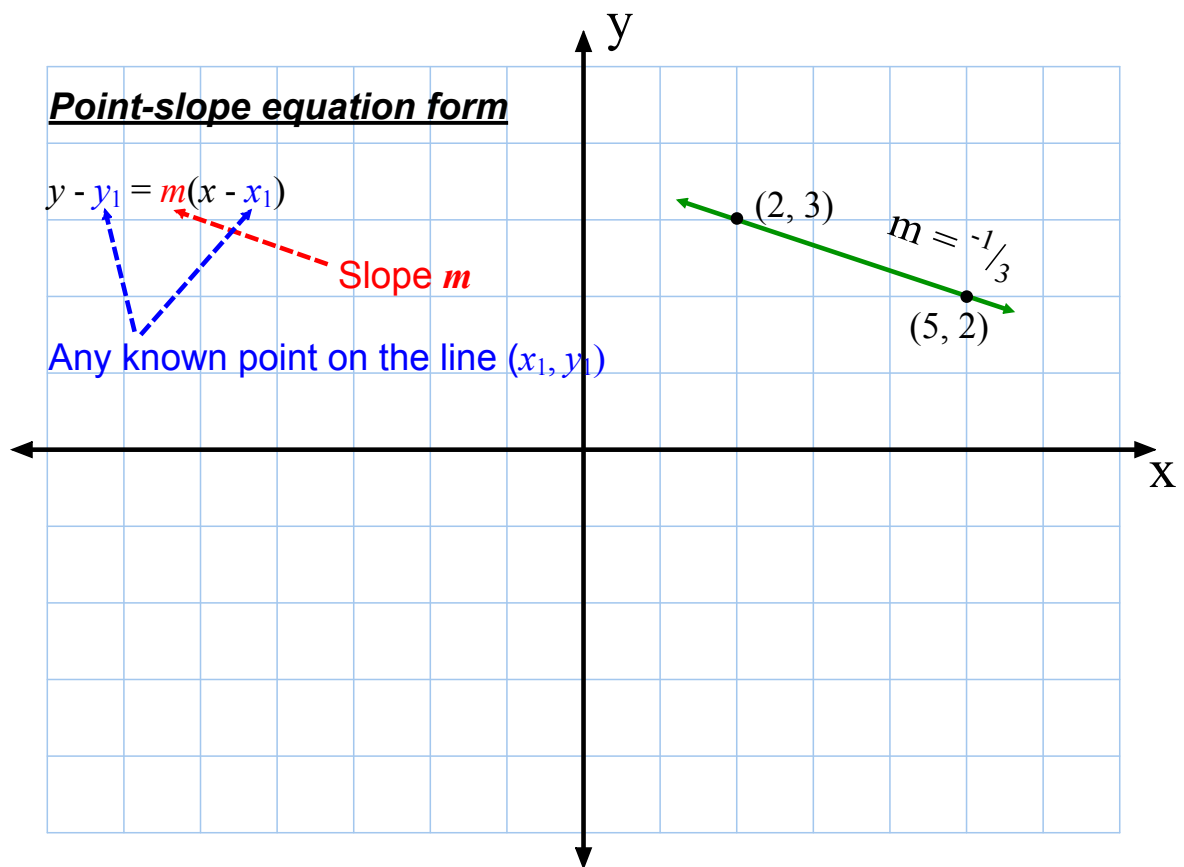
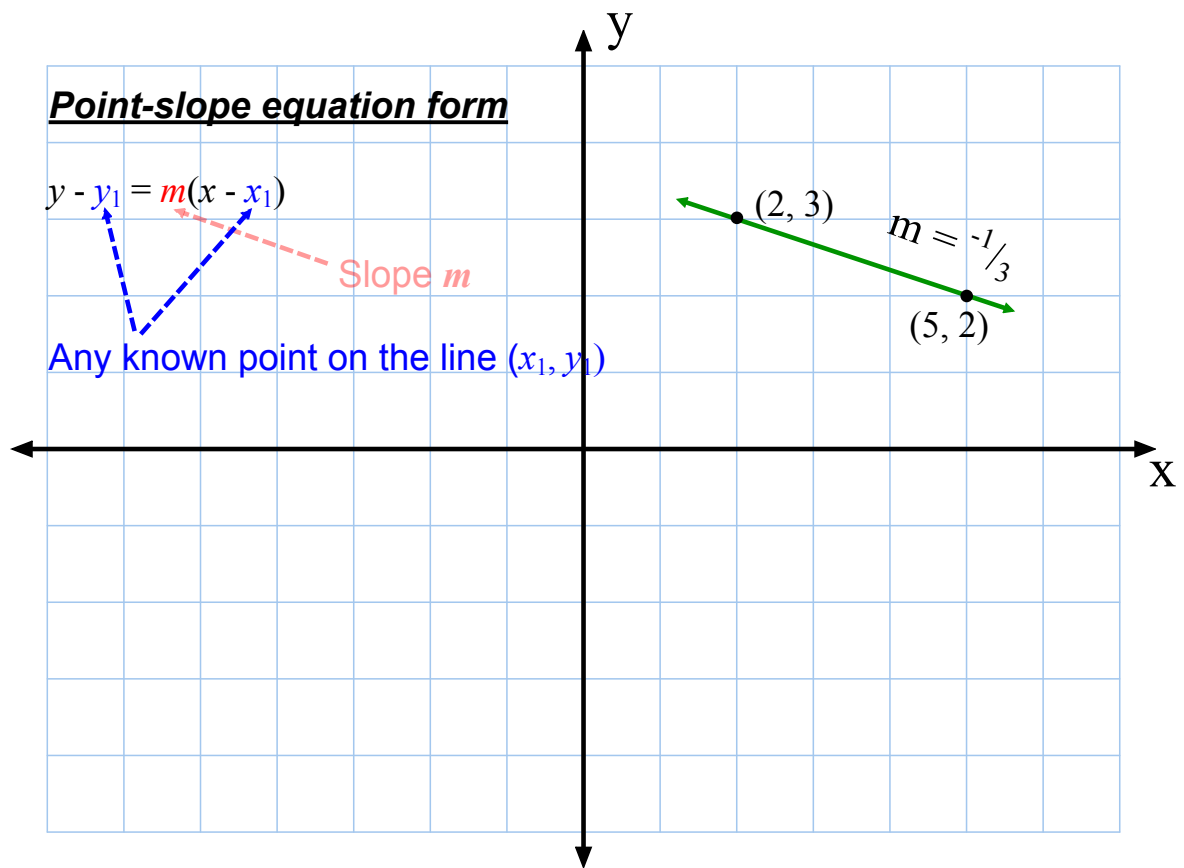


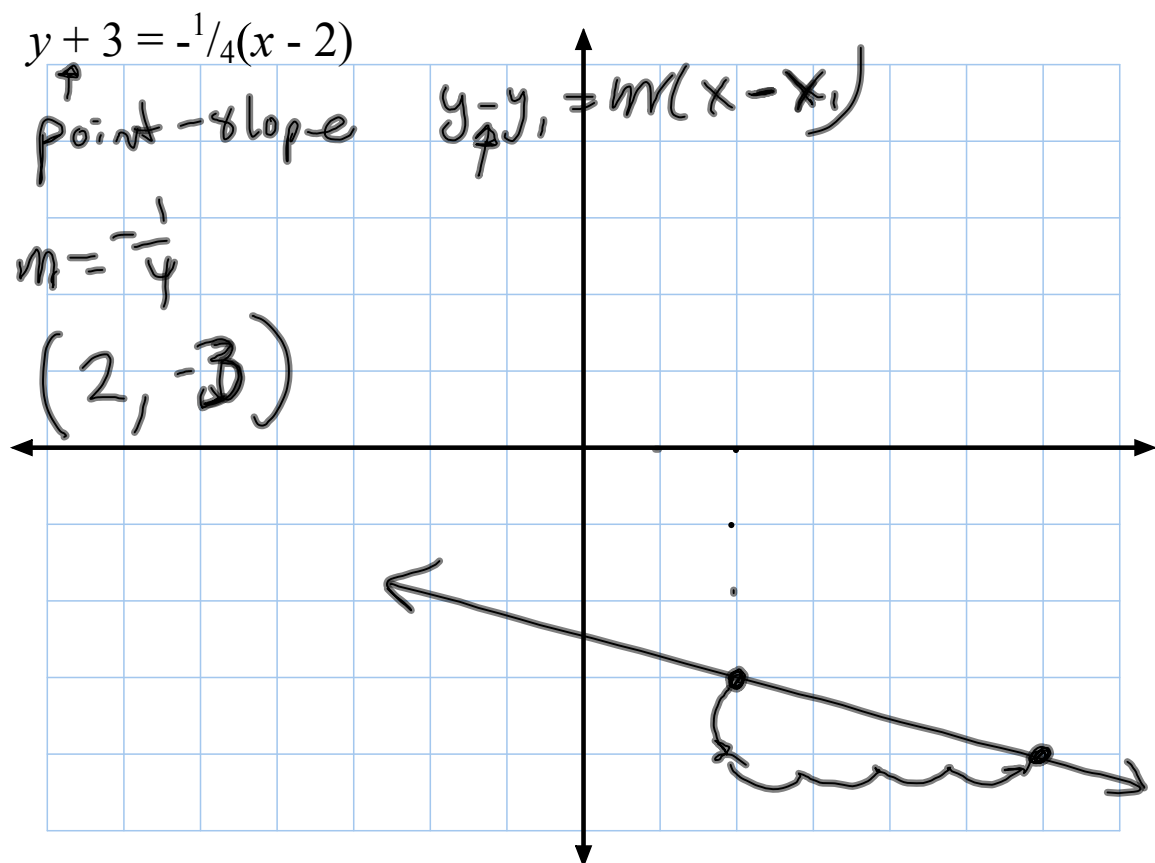
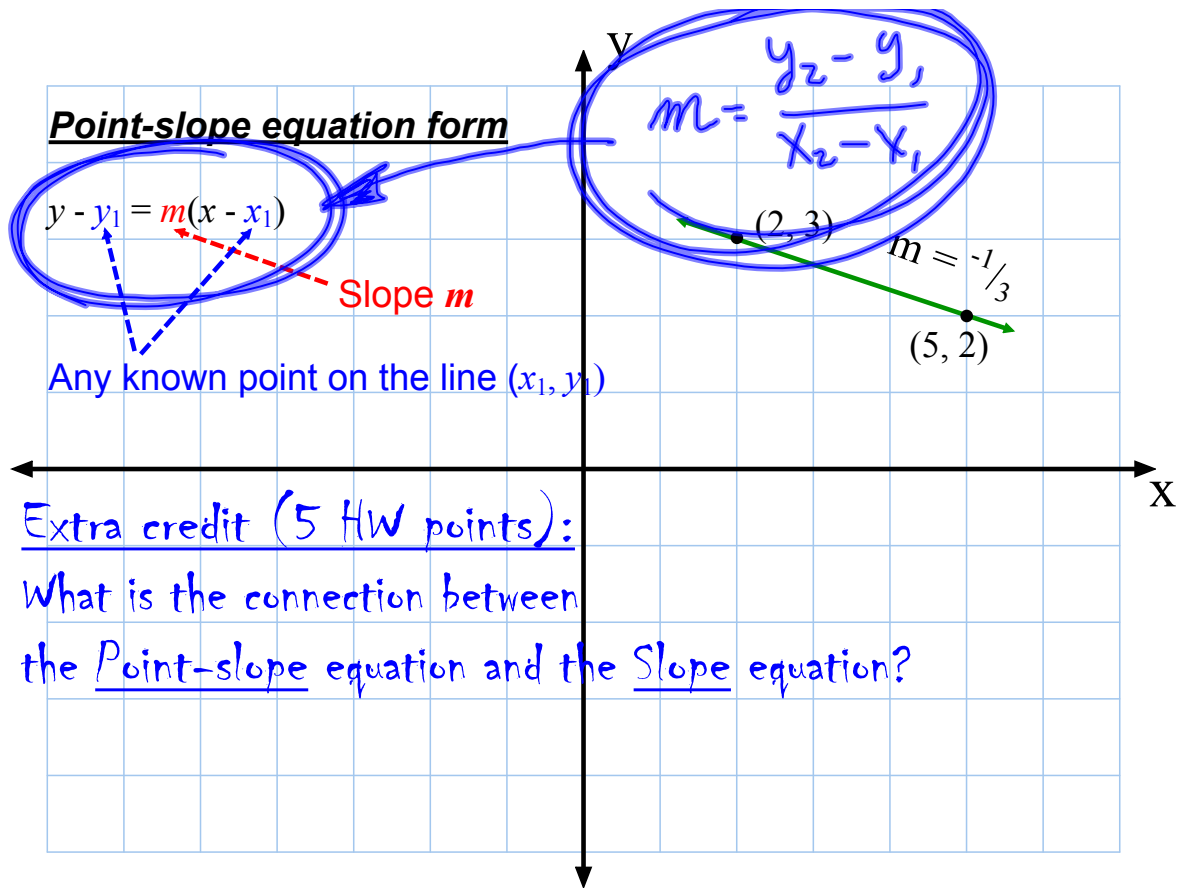


Line form name	Equation	What it gives us
Slope-intercept form	$y = mx + b$	Slope & y-intercept

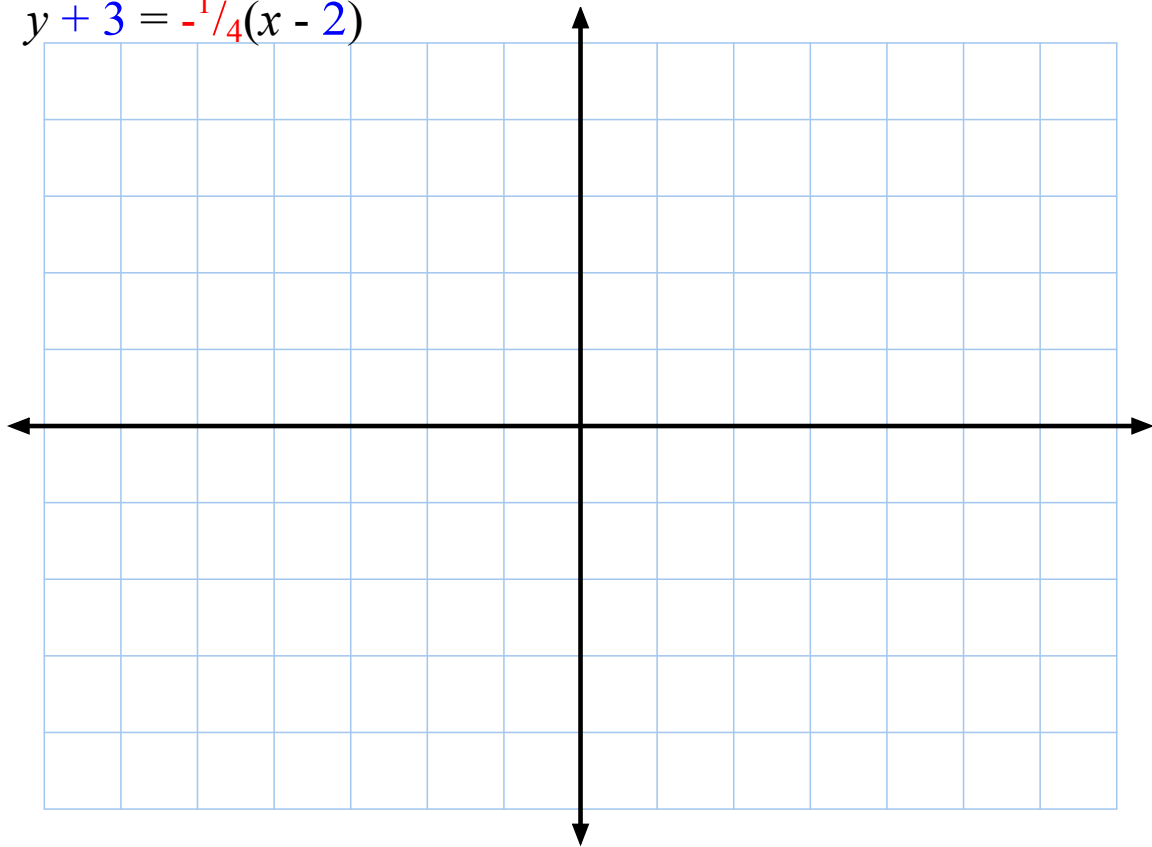




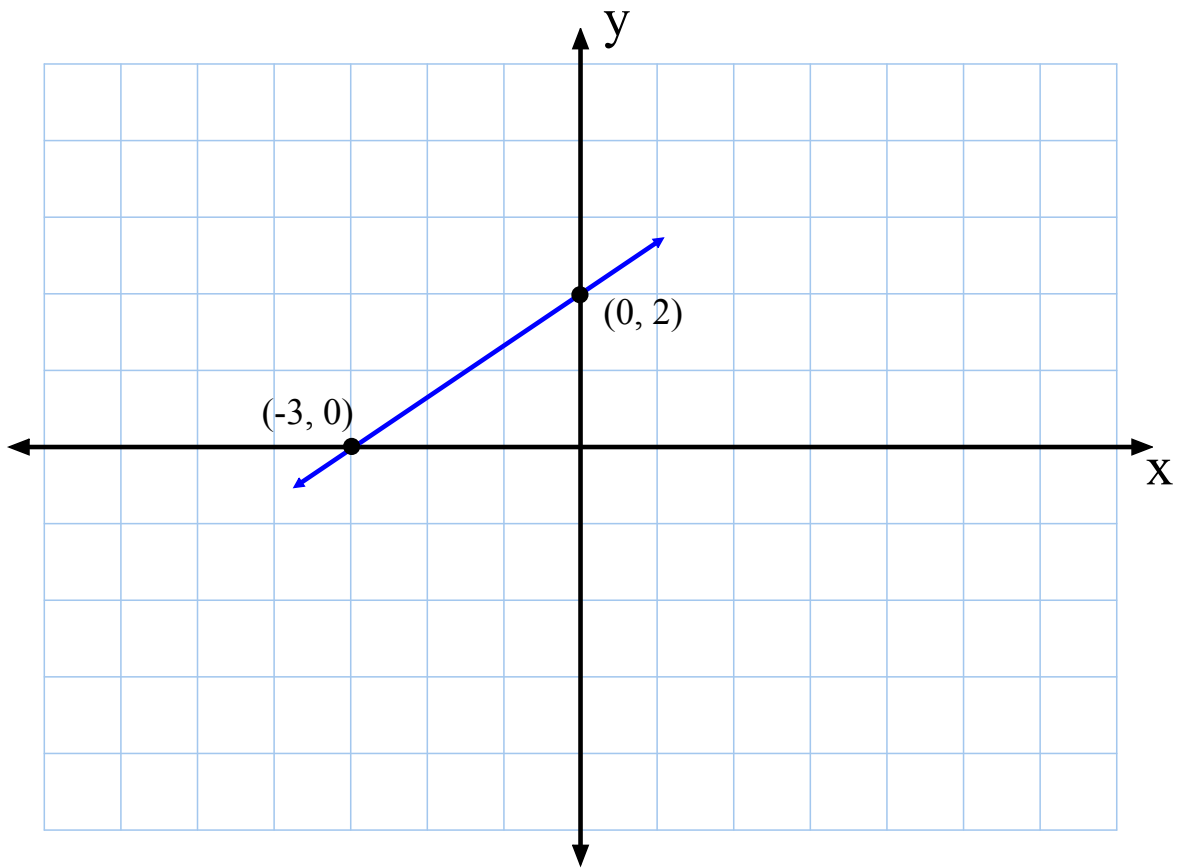




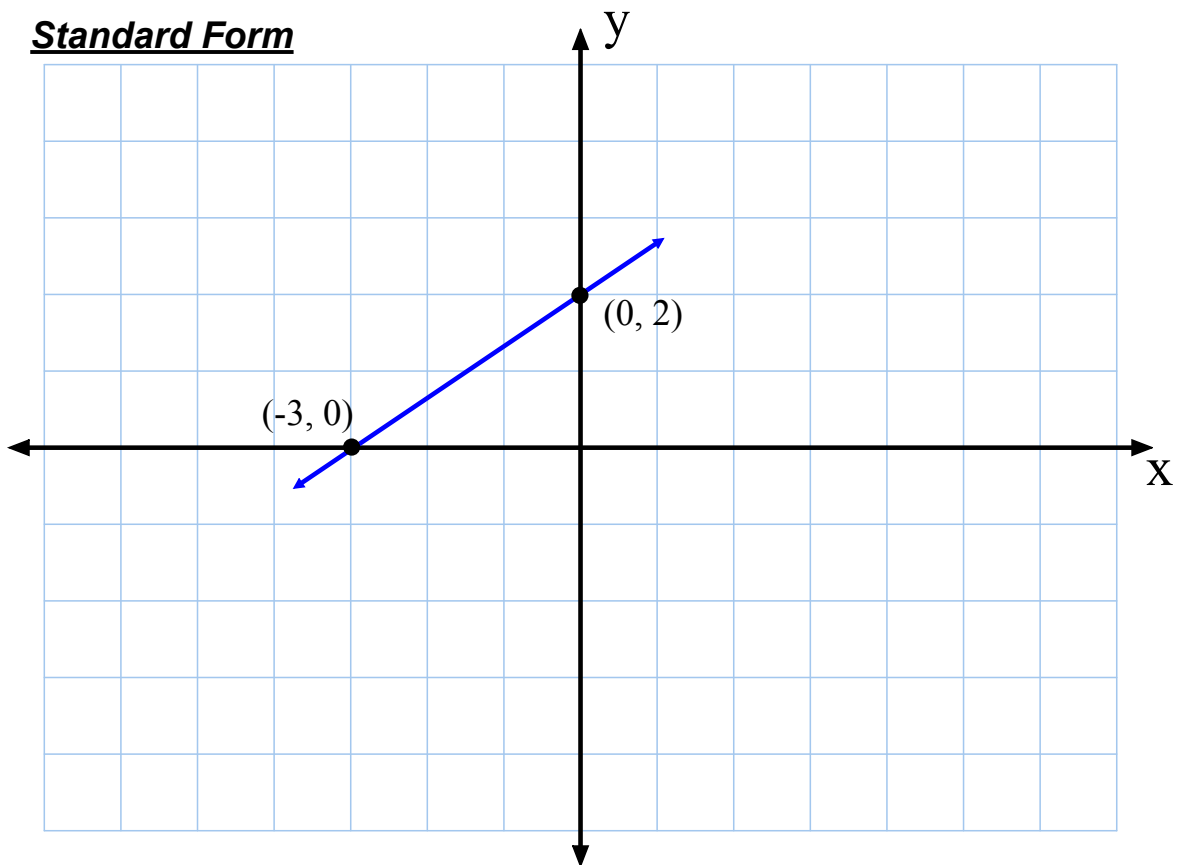
$$y + 3 = -\frac{1}{4}(x - 2)$$



Line form name	Equation	What it gives us
Slope-intercept form	$y = mx + b$	Slope & $y$ -intercept
Point-Slope form	$y - y_1 = m(x - x_1)$	Slope & 1 pt the line goes thru

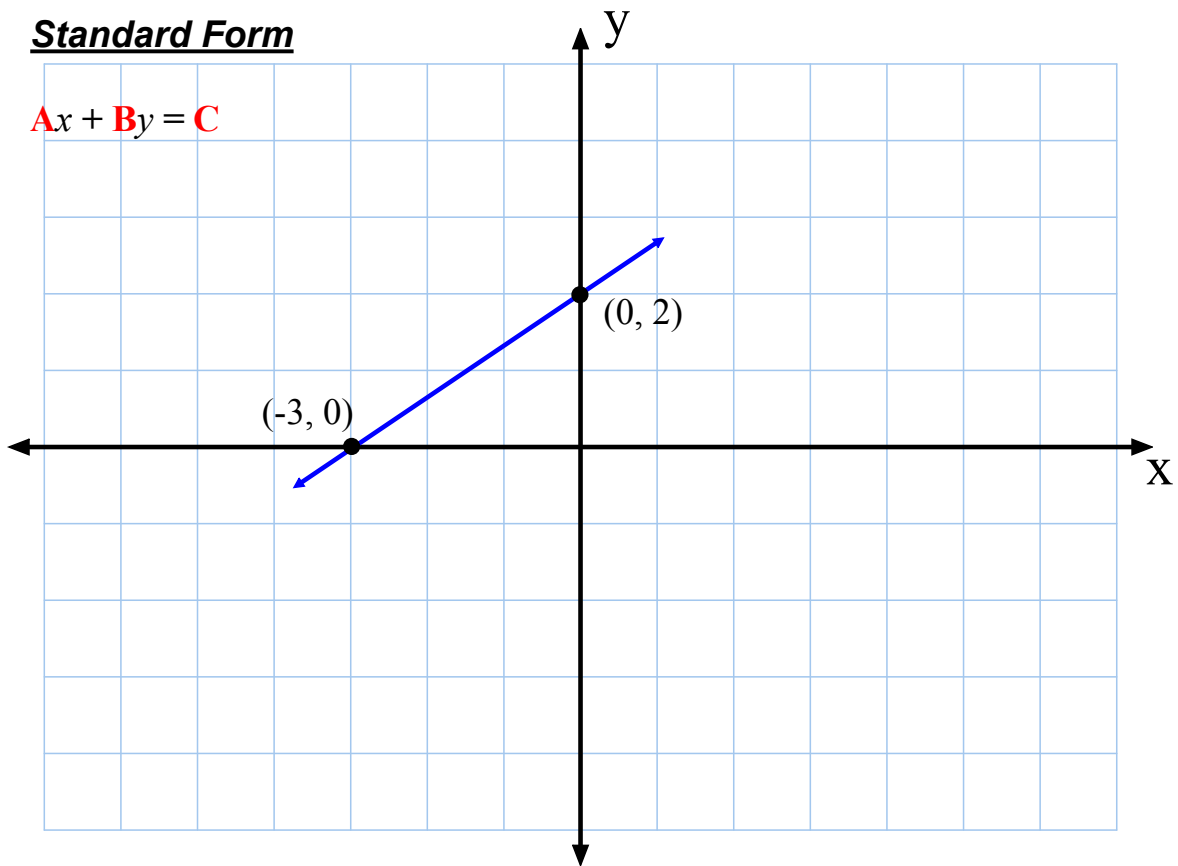


**Standard Form**



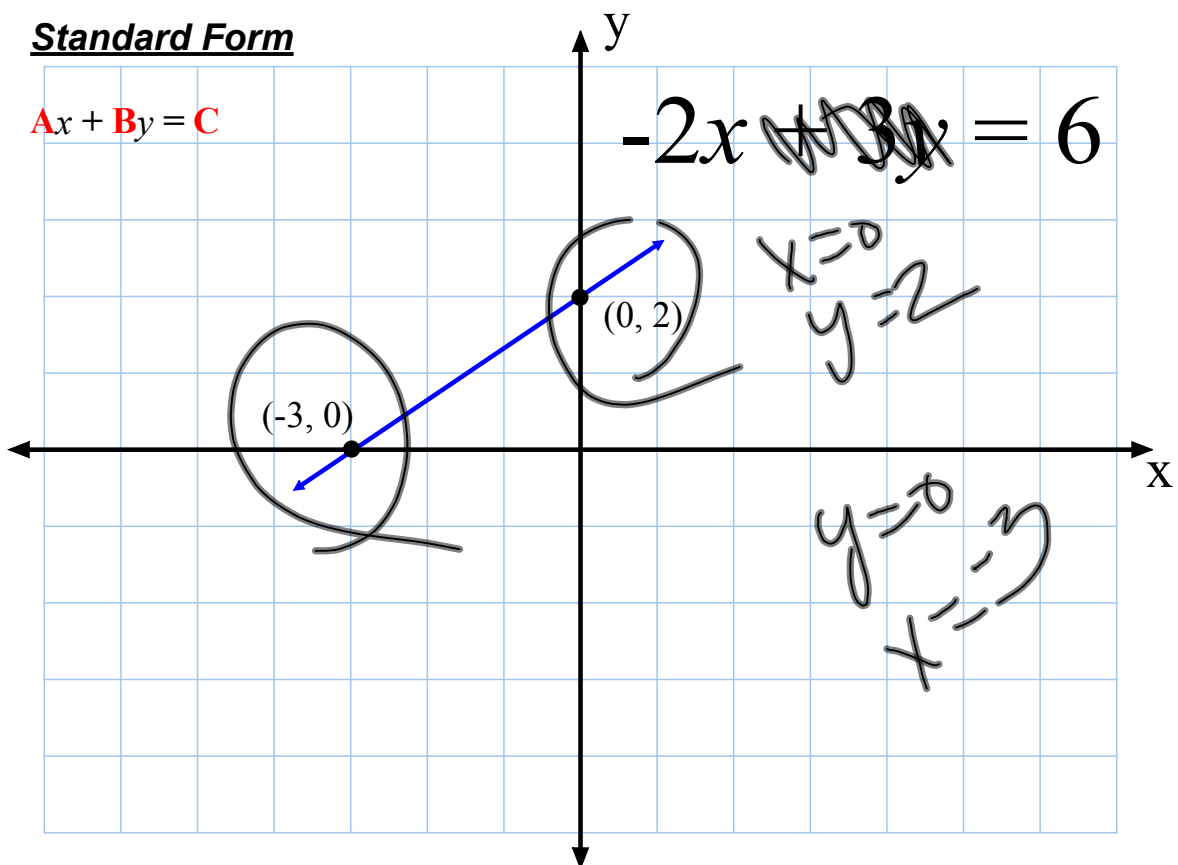
Standard Form

$Ax + By = C$



Standard Form

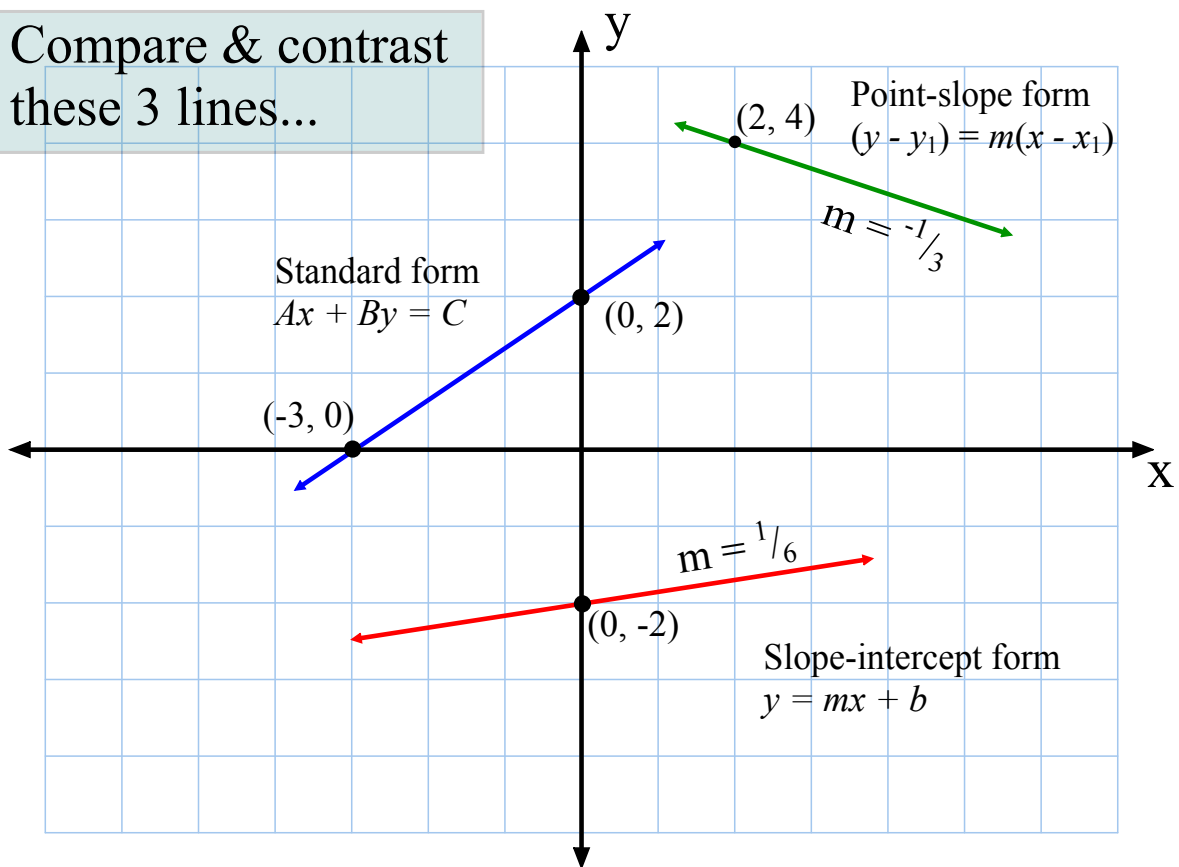
$Ax + By = C$

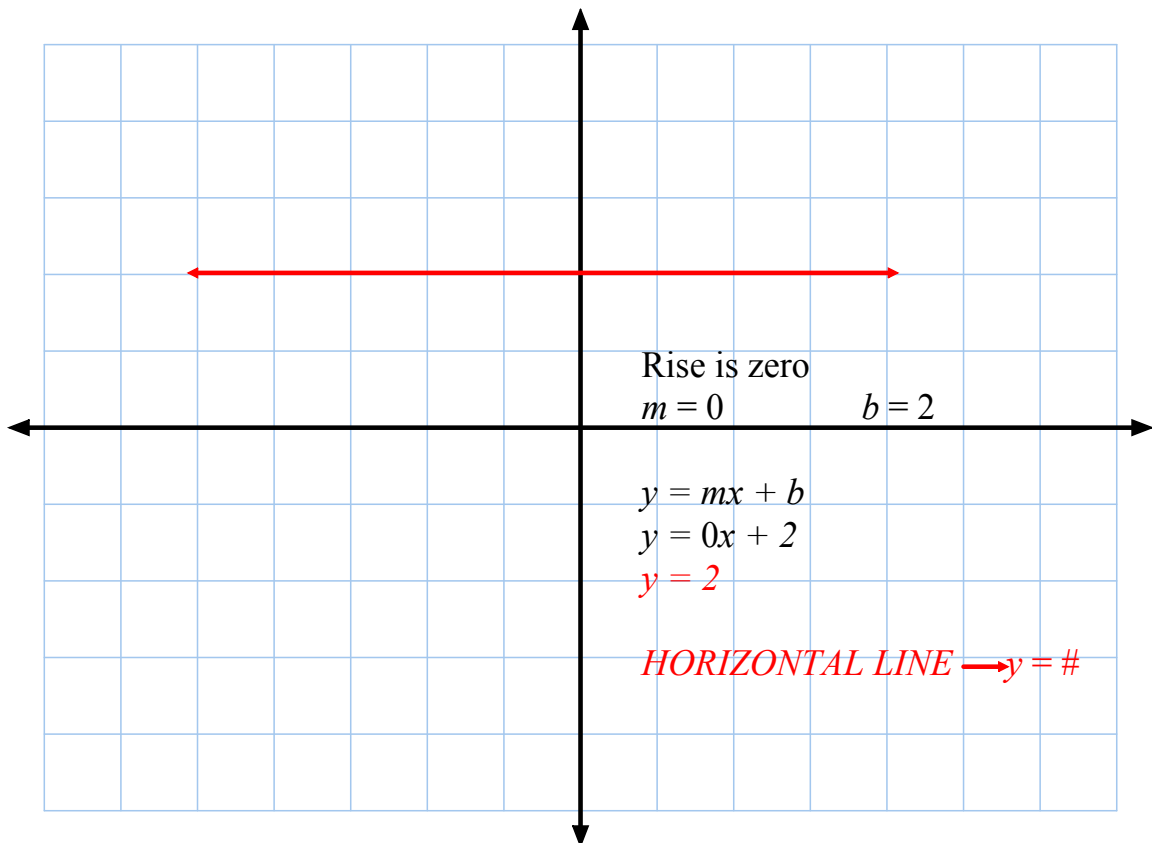
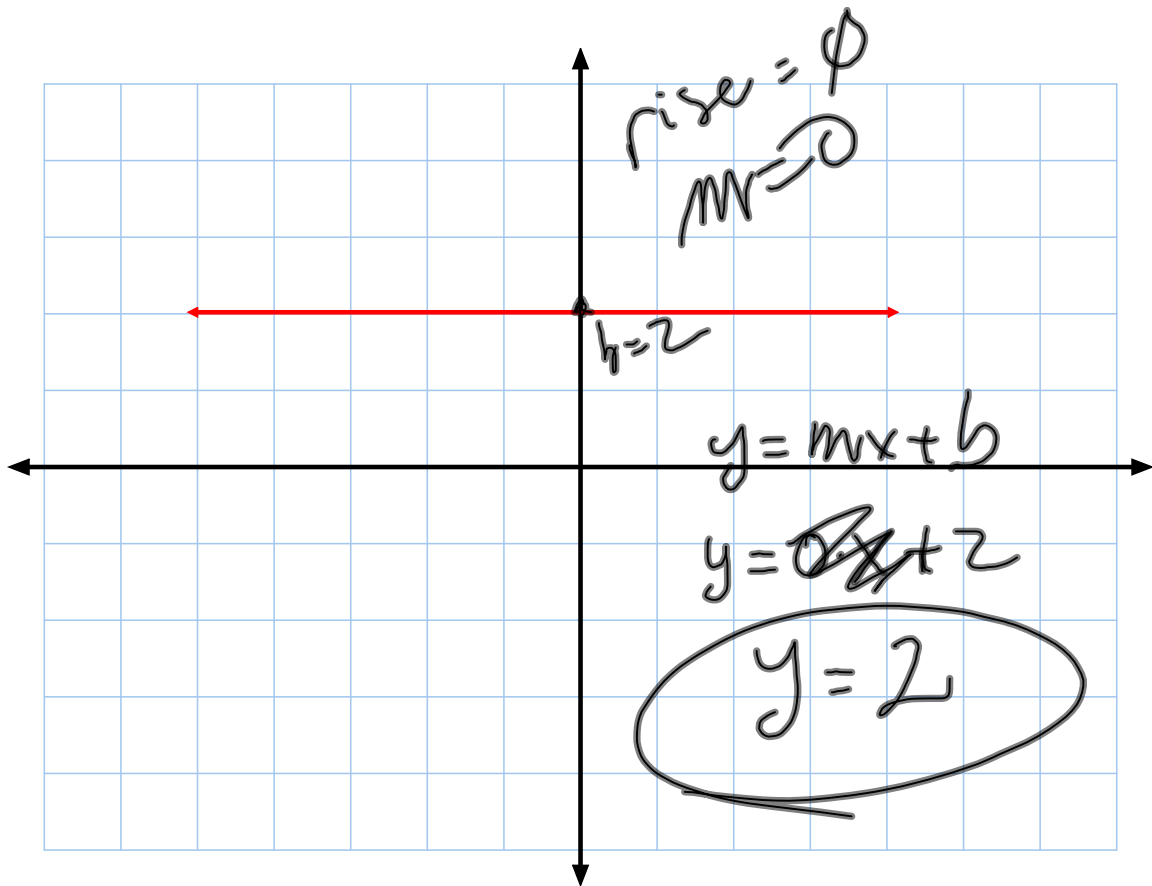


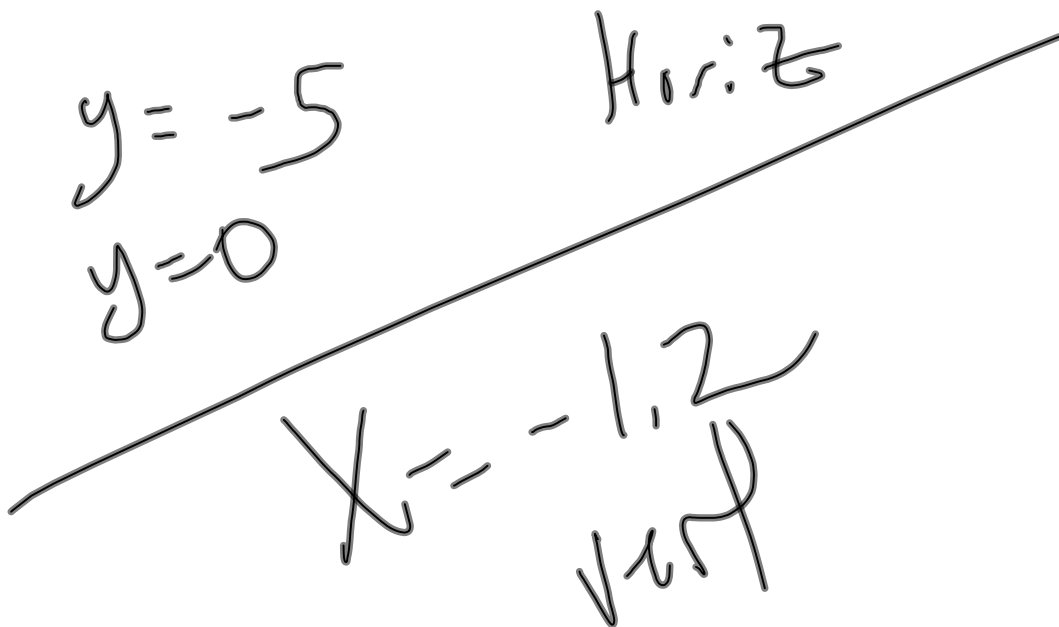
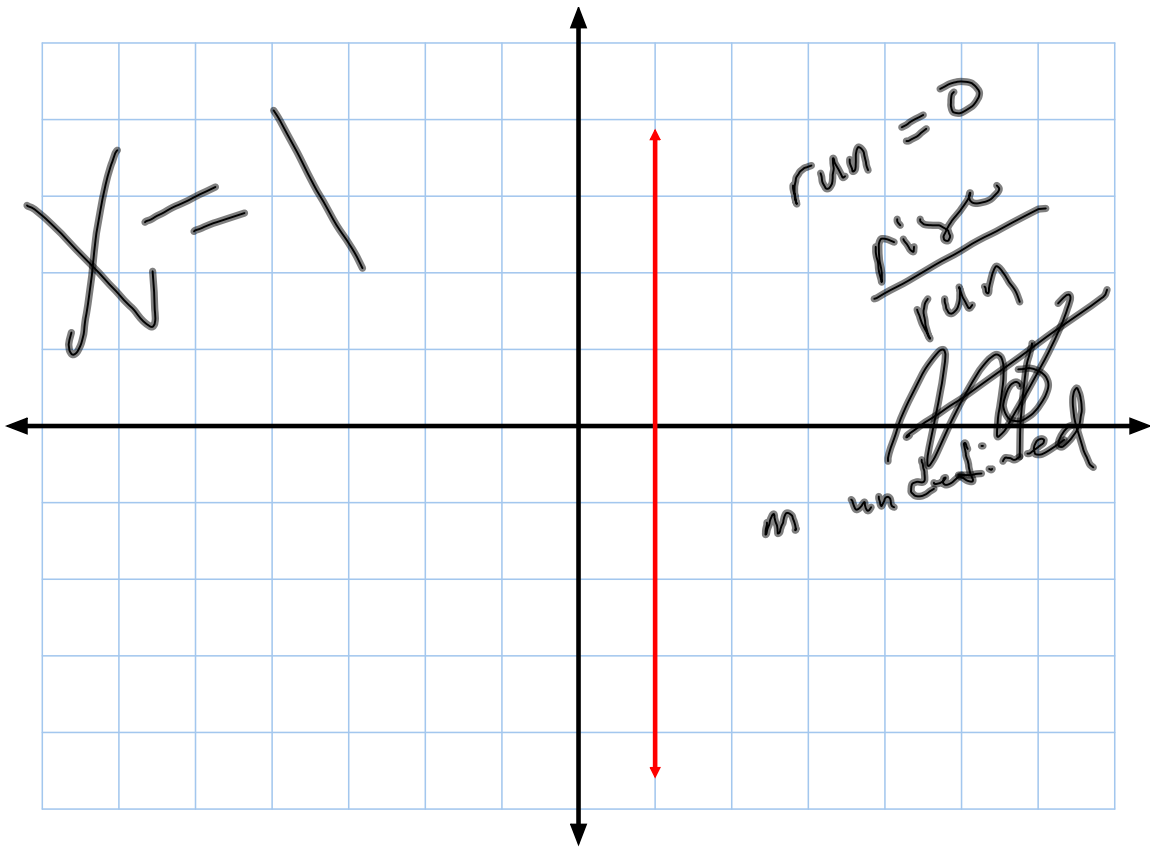


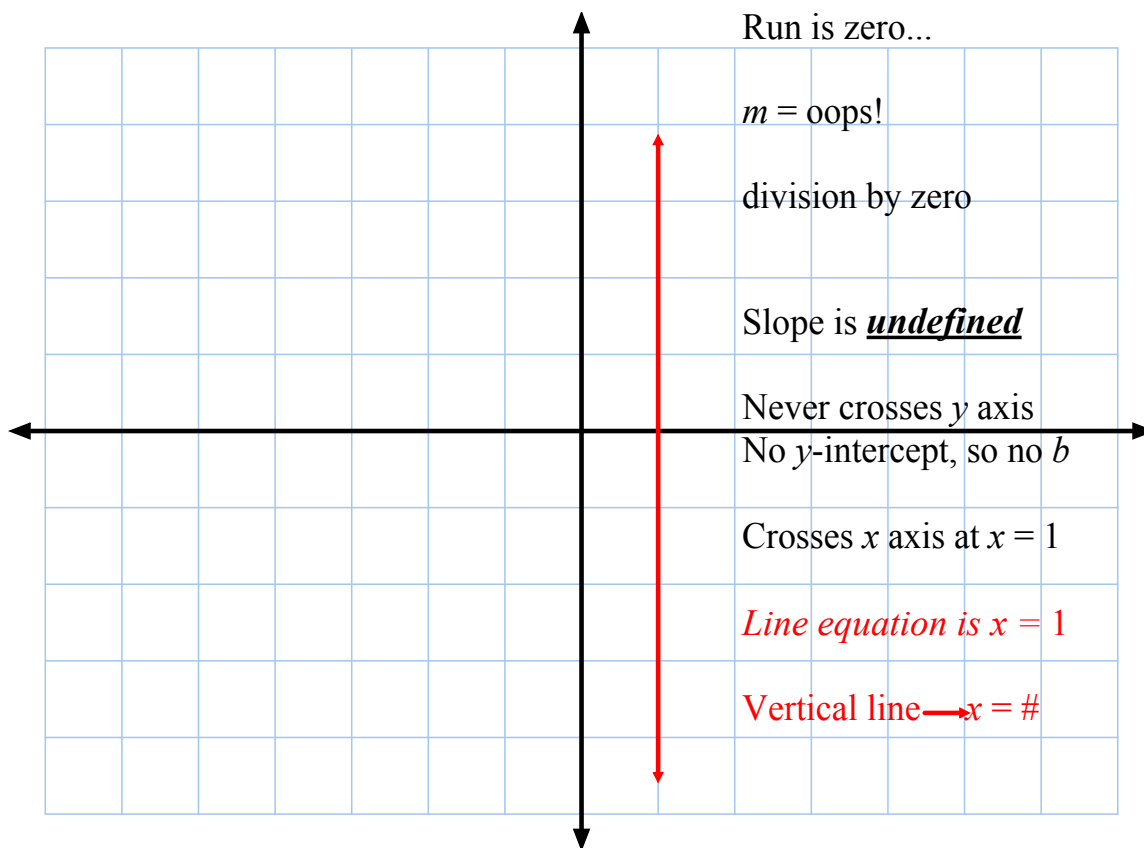
Line form name	Equation	What it gives us
Slope-intercept form	$y = mx + b$	Slope & y-intercept
Point-Slope form	$y - y_1 = m(x - x_1)$	Slope & 1 pt the line goes thru
Standard form	$Ax + By = C$	x & y-intercepts

Compare & contrast these 3 lines...



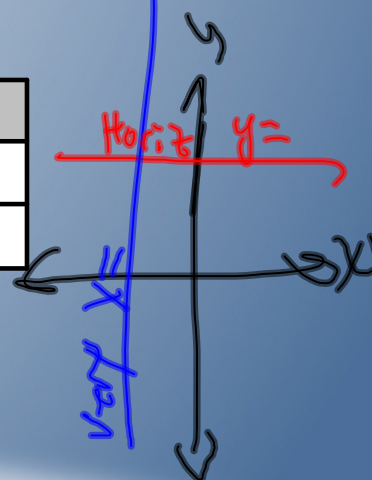






Line form name	Equation	What it gives us
Slope-intercept form	$y = mx + b$	Slope & $y$ -intercept
Point-Slope form	$y - y_1 = m(x - x_1)$	Slope & 1 pt the line goes thru
Standard form	$Ax + By = C$	$x$ & $y$ -intercepts

Horizontal or vertical?	Ask "which axis does it cross?"
Horizontal	Touches $y$ axis so it is $y =$
Vertical	Touches $x$ axis so it is $x =$



## L3-5 HW Problems

Pg 155, #1-43 odd  
48-51