

Understanding Slope and the Equation $y=mx + b$

Enter the equation $y=2x+1$ in your graphing calculator.
Set up the table to begin at $x = 0$ and increase by steps of 1.

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Plot1 Plot2 Plot3
\Y1=2X+1
\Y2=
\Y3=
\Y4=
\Y5=
\Y6=
\Y7=
  
```

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TABLE SETUP
TblStart=0
ΔTbl=1
Indent:  Ask
Depend:  Ask
  
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X	Y1	
0	1	
1	3	
2	5	
3	7	
4	9	
5	11	
6	13	

X=0

Describe how the y values are changing. Describe how the x values are changing. Write a ratio for the change in y to the change in x.

Change the table to begin at 0 and increase by steps of 2.

Describe how the y values are changing. Describe how the x values are changing. Write a ratio for the change in y to the change in x. What do you notice about the ratio?

Change the table to begin at 1 and increase by steps of 3.

Describe how the y values are changing. Describe how the x values are changing. Write a ratio for the change in y to the change in x.

Change the table to begin at 1 and increase by steps of 0.5.

Describe how the y values are changing. Describe how the x values are changing. Write a ratio for the change in y to the change in x.

Change the table to begin at 1 and decrease by steps of 4.

Describe how the y values are changing. Describe how the x values are changing. Write a ratio for the change in y to the change in x.

Describe what you have learned about slope and the equation $y= mx + b$.

Equation	Starting x value	Increment for x	Change in y	Change in x	$\frac{\text{change in } y}{\text{change in } x}$
$y = 3x - 1$	2	2			
$y = \frac{1}{2}x + 3$	3	2			
$y = \frac{1}{2}x + 3$	1	2			
$y = \frac{2}{3}x + 1$	3	3			
$y = \frac{2}{3}x + 1$	3	6			
$y = \frac{3}{4}x - 1$	4	4			
$y = \frac{3}{4}x - 1$	4	8			
$y = \frac{1}{3}x - 1$	-6	3			
$y = \frac{1}{3}x - 1$	12	6			
$y = \frac{7}{8}x - 5$	8	8			
$y = \frac{7}{8}x - 5$	-16	16			