

Name _____

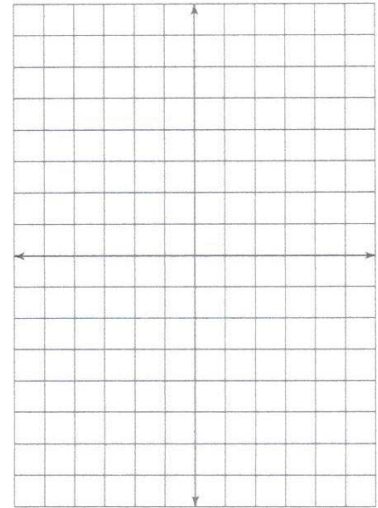
What Do the Graphs of Linear Functions Look Like?

Graph each of the following equations using a graphing calculator, and then sketch all four lines on the same axis.

Slope Intercept Form: $y = mx+b$

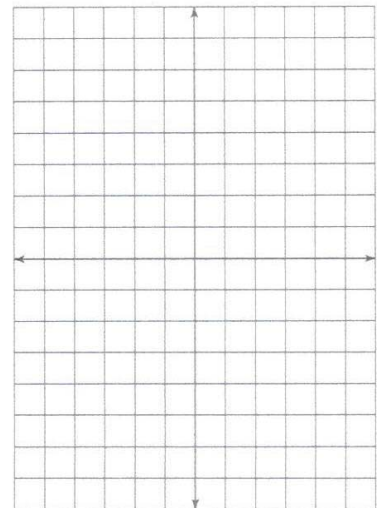
<p>A. $y = 2x+6$ $y = 2x+3$ $y = 2x+5$ $y = 2x+1$</p>
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1. What stays the same when the lines are drawn?
2. What is different?
3. Explain what the graph of $y = 2x-5$ would look like.
4. How does changing b , the y -intercept, affect the graph of $y = mx+b$?



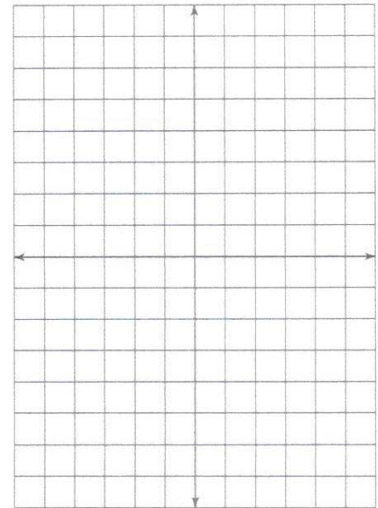
<p>B. $y = x+3$ $y = 2x+3$ $y = 4x+3$ $y = 3x+3$</p>

1. What stays the same when the lines are drawn?
2. What is different?
3. Explain what the graph of $y = 5x+3$ would look like.
4. How does changing m , the slope, affect the graph of $y = mx+b$?



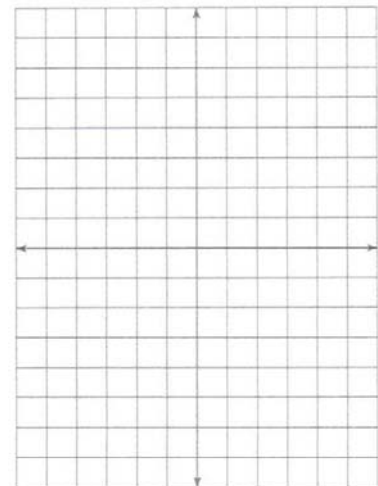
C.
 $y = -2x+6$
 $y = -2x+3$
 $y = -2x+5$
 $y = -2x+1$

1. What stays the same when the lines are drawn?
2. What is different?
3. Explain what the graph of $y = -2x+2$ would look like.
4. Make a conjecture about how m , the coefficient of x , affects the graph of $y = mx+b$.



D.
 $y = -x+4$
 $y = -2x+4$
 $y = -4x+4$
 $y = -3x+4$

1. What stays the same when the lines are drawn?
2. What is different?
3. Explain what the graph of $y = -5x+4$ would look like.
4. Make a conjecture about how adding 4 affects the graph of $y = mx+b$.



E.
How has using the graphing calculator assisted you in understanding what the graphs of linear functions look like?

F.
What conclusions can you make?