

Algebra I

Concept Byte 5-3

Standard:

F.BF.3 Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $kf(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative)...

Learning Goal:

- I can analyze lines on the same graph.
- I can analyze components of the equation $y = mx + b$ and how they affect the graph.
- I can match linear equations and graphs.

Use a graphing calculator to explore the graph of an equation in the form $y = mx + b$.

Graph these equations on the same screen.

$$y = x + 3 \qquad y = 2x + 3 \qquad y = \frac{1}{2}x + 3$$

The graph of _____ is the steepest.

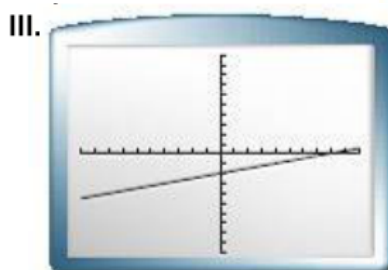
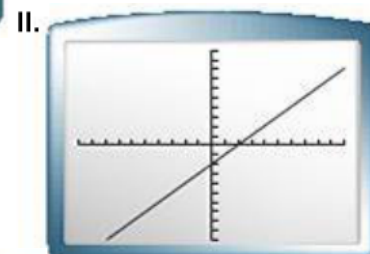
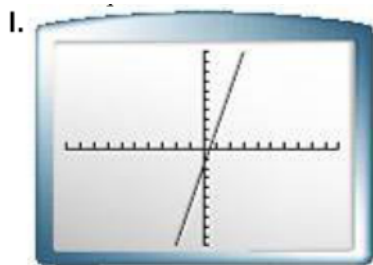
The graph of _____ is the least steep.

Match each equation with the best choice for its graph.

$$y = \frac{1}{4}x - 2$$

$$y = 4x - 2$$

$$y = x - 2$$



Graph these equations on the same screen.

$$y = 2x + 3$$

$$y = -2x + 3$$

How does the sign of m affect the graph of the equation?

How does changing the value of m affect the graph of an equation in the form $y = mx + b$?

Graph the equations on the same screen.

Where does the graph of each equation cross the y -axis?
(You may need to zoom to better see the points of intersection.)

$$y = 2x + 3$$

$$y = 2x - 3$$

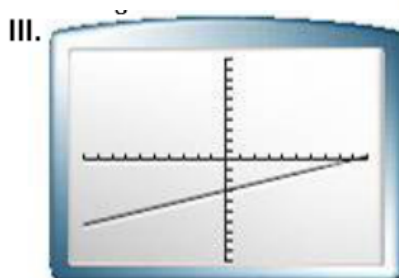
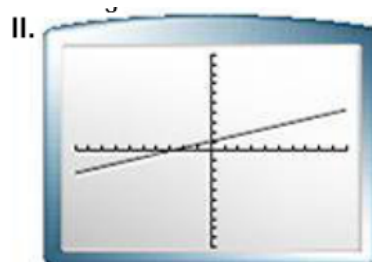
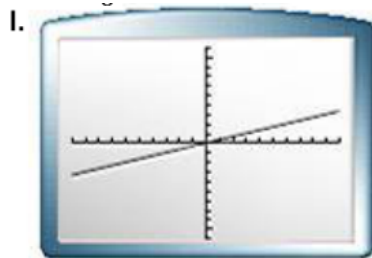
$$y = 2x + 2$$

Match each equation with the best choice for its graph.

$$y = \frac{1}{3}x - 3$$

$$y = \frac{1}{3}x + 1$$

$$y = \frac{1}{3}x$$



How does changing the value of b affect the graph of an equation in the form $y = mx + b$?



Assignment

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Finish this packet