1. Select the points that will lie on a line with a slope of $\frac{2}{3}$.

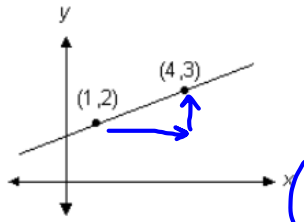
(a) (2, 1) and (1, 1) (b) (4, 1) and (6, 4) (c) (6, 2) and (3, 4) (d) (–5, 0) and (–2, 2)

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

$m = \frac{2}{-2-(-5)}$

$m = \frac{2}{3}$

2. Select the correct slope of this line.




(a) $\frac{1}{3}$ (b) 1 (c) 3 (d) $-\frac{1}{3}$

3. For the equation $y = -2x + 2$, select the statement that is true.

(a) The slope is 2. (b) The $x$-intercept is 2. (c) The line passes through (-2, 2). (d) The $x$-intercept is 1.

(2,0) (1,0)

4. Find the equation of the line passing through the points (2, 7) and (4, 8).

Q3

a) $m = -2 = \frac{-2}{1} = \frac{\downarrow 2}{\rightarrow 1}$

b) LS $= 0$ RS $= -2x + 2 = -4 + 2 = -2$

c) LS $= 2$ RS $= -2(-2) + 2 = 4 + 2 = 6$

LS $\neq$ RS

d) LS $= 0$ RS $= -2(1) + 2 = -2 + 2 = 0$

4. Find the equation of the line passing through the points (2, 7) and (4, 8).

A B

step one - calculate rate of change (slope) "m"

$$m = \frac{8-7}{4-2} = \frac{1}{2} = \frac{\Delta y}{\Delta x} = \frac{\text{rise}}{\text{run}}$$

$$m = \frac{1}{2}$$

step two - calculate "b" (y-coordinate in the y-intercept) ex. (0,b)

how? sub in "m" and a given point (x,y)

$y = mx + b$

$y = \frac{1}{2}x + b$ use (2,7)

$7 = \frac{2}{2} + b$

$7 = 1 + b$

$7 - 1 = b$

$b = 6$

solving for "b"

$-1 + 7$

$7 - 1$

step three - write the complete equation using "m" and "b" that you calculated

$$y = \frac{1}{2}x + 6$$

$y = mx + b$

2.9 p. 133

9, 7b

S1 $m = \frac{3}{2}$ Given

S2 $y = \frac{3x}{2} + b$ $(-4, 1)$ Given

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

$1 = \frac{-12}{2} + b$

$1 = -6 + b$

$1 + 6 = b$

$b = 7$

S3 $m = \frac{3}{2}$ $b = 7$

$$y = \frac{3x}{2} + 7$$

2.9 p.133 #7g

S1 "m"

given (5, 0) (0, -2)

$b = -2$

$$m = \frac{-2-0}{0-5}$$

$$m = \frac{-2}{-5} = \frac{2}{5}$$

S2 "b" given

$b = -2$

S3 $y = mx + b$

$$y = \frac{2x}{5} + (-2)$$

$$y = \frac{2x}{5} - 2$$