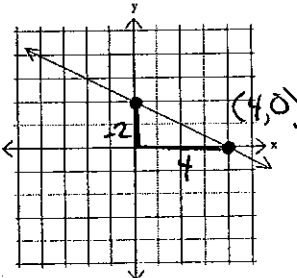
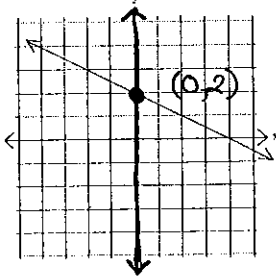


$$y = mx + b$$

Slope (m) = $\frac{\text{vertical change}}{\text{horizontal change}} = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$

y-intercept (b): where the line crosses the y-axis ($x = 0$)

TABLE	<p>Using the table, look at change in y (Δy) versus change in x (Δx).</p> <table border="1" style="display: inline-table; margin-right: 20px;"> <thead> <tr><th>x</th><th>y</th></tr> </thead> <tbody> <tr><td>-1</td><td>-2</td></tr> <tr><td>0</td><td>0</td></tr> <tr><td>1</td><td>2</td></tr> <tr><td>3</td><td>6</td></tr> </tbody> </table> <p>$m = \frac{\Delta y}{\Delta x} = \frac{2}{1} = \frac{4}{2} = 2$</p>	x	y	-1	-2	0	0	1	2	3	6	<p>Using the table, find the y value when $x = 0$.</p> <table border="1" style="display: inline-table; margin-right: 20px;"> <thead> <tr><th>x</th><th>y</th></tr> </thead> <tbody> <tr><td>-1</td><td>-2</td></tr> <tr><td>0</td><td>0</td></tr> <tr><td>1</td><td>2</td></tr> <tr><td>3</td><td>6</td></tr> </tbody> </table> <p>$b = 0$</p> <p>if $x = 0$ is not included in the table, use the pattern (slope/rate) to figure out the y-intercept.</p>	x	y	-1	-2	0	0	1	2	3	6
x	y																					
-1	-2																					
0	0																					
1	2																					
3	6																					
x	y																					
-1	-2																					
0	0																					
1	2																					
3	6																					
GRAPH	<p>Using the graph, determine the rise and run (slope triangle) between 2 convenient points & write as ratio.</p>  <p>$m = \frac{\text{rise}}{\text{run}} = \frac{-2}{4} = -\frac{1}{2}$</p>	<p>Using the graph, determine the y-value where the graph of the line crosses the y-axis ($x = 0$).</p>  <p>$b = 2$</p>																				

$y = 2x$

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

$$y = mx + b$$

Slope (m) = $\frac{\text{vertical change}}{\text{horizontal change}} = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$

y-intercept (b): where the line crosses the y-axis ($x = 0$)

EQUATION $y = mx + b$	<p>$y = \frac{1}{4}x - 10$</p> <p>The slope of a linear equation (in $y = mx + b$ form) is the coefficient of x (the #/constant that x is multiplied by).</p> <p style="text-align: center;">$m = \frac{1}{4}$</p>	<p>$y = \frac{1}{4}x - 10$</p> <p>The y-intercept for a linear equation is the constant being "added" to the x-term. If being subtracted, then b is negative.</p> <p style="text-align: center;">$b = -10$</p>
TWO POINTS (x_1, y_1) & (x_2, y_2)	<p>P1: (4, 3) P2: (8, 5)</p> <p>Given 2 points, use slope formula</p> <p style="text-align: center;">$m = \frac{y_2 - y_1}{x_2 - x_1} \left(\frac{\Delta y}{\Delta x} \right)$</p> <p style="text-align: center;">$m = \frac{5 - 3}{8 - 4} = \frac{2}{4} = \frac{1}{2}$</p>	<p>P1: (4, 3) P2: (8, 5)</p> <p>if $(0, b)$ is not one of the given points, then multiply one of the x-values by the slope & figure out what is "added" to get the y-value in (x, y).</p> <p style="text-align: center;"> $(4, 3) \quad \frac{1}{2}(4) + b = 3$ $2 + b = 3$ $b = 1$ </p>

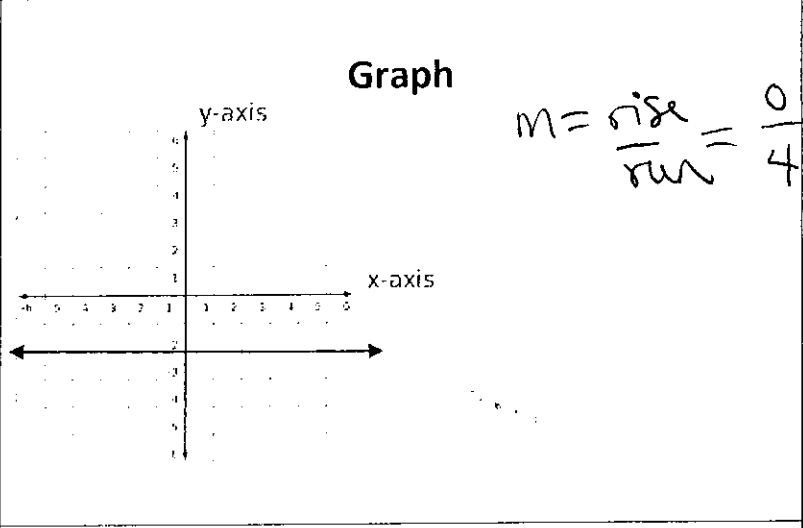
-
+
x
10
5 =

EQUATION
 $y = b$

Table

x	y
-1	-2
0	-2
1	-2
3	-2

$m = \frac{\Delta y}{\Delta x} = \frac{0}{1} = 0$



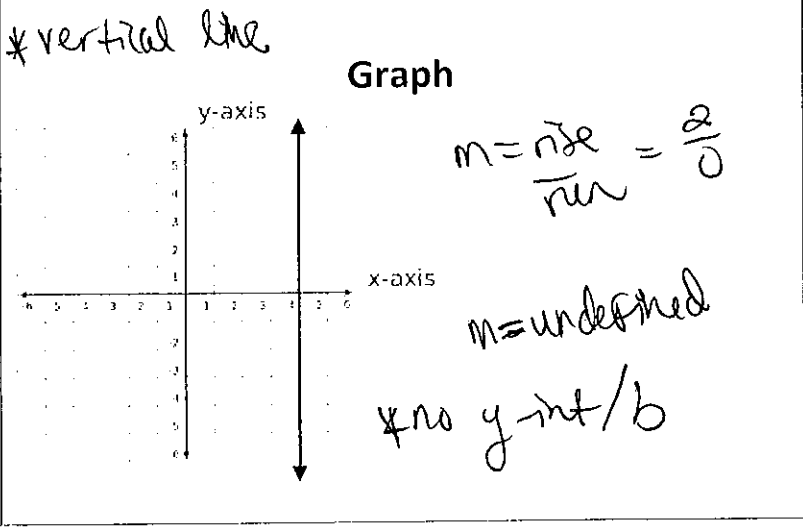
$y = -2$

Equation
 $x = a$

Table

x	y
4	-2
4	0
4	2
4	6

$m = \frac{\Delta y}{\Delta x} = \frac{2}{0}$
 $m = \text{undefined}$



$x = 4$