SM3-A: Lesson 1-2 Handout

Delta a Greek letter (that looks like a triangle) used in engineering and math to denote "change."

Δx Means _____

Δy Means _____

$y = 3x - 5$

x	0	2	4
y			

1) Fill in the output values defined by the equation

2) Find Δx and Δy for adjacent values in each table

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$y = 3x + 4$

x	0	1	2
y			

Notice the numbers that have been circled.

This number in the equation is called the _____

$y = -4x + 2$

x	0	1	2
y	2	-2	6

Why isn't the change in 'y' between adjacent terms equal to the coefficient of 'x'?

_____

$y = 2x + 1$

x	0	2	4
y	1	5	9

+2 +2 +4 +4

$y = 3x - 5$

x	0	2	4
y	−5	1	7

+2 +2 +6 +6

How can you use the change in 'x' and the change in 'y' in the tables to calculate the coefficient of 'x'?

_____

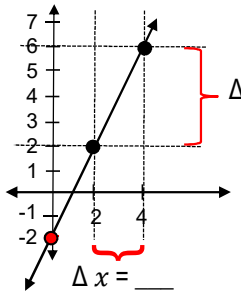
$y = 2x - 2$

x	0	2	4
y	−2	2	6

$\Delta x = 2$ $\Delta x = 2$ $\Delta y = 4$ $\Delta y = 4$

Slope (of a line) is its steepness given by:

$m =$ —



$\Delta y =$ ___

$\Delta x =$ ___

Slope is the coefficient of 'x' when the equation is written in the form: y = _____

$m =$ ____

If a graph is linear, the slope (steepness) needs to be _____

Your turn: Which data set is linear?

A

x	f(x)
0	0
1	1
2	1.4
3	1.7
4	2.0
5	2.2
6	2.4
7	2.6
8	2.8
9	3

B

x	g(x)
-4	32
-3	18
-2	8
-1	2
0	0
1	2
2	8
3	18
4	32

C

x	f(x)
-4	-7
-3	-5
-2	-3
-1	-1
0	1
1	3
2	5
3	7
4	9

Slope-intercept form of a linear equation:
the equation of a line written in the form:
y = f(x)
that gives the
slope of the line
and
the y-value where the graph crosses the y-axis.

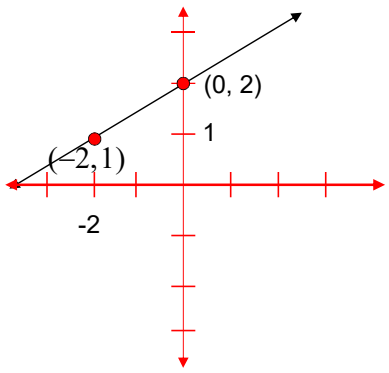
$$y = mx + b$$

$$y = 3x + 2$$

Slope = 3 y-intercept: (0, 2)

What is the equation of the line?

$y = mx + b$



What is the equation fits the data?

x	f(x)
-4	-7
-3	-5
-2	-3
-1	-1
0	1
1	3
2	5
3	7
4	9

What is the equation of the line?