Writing Equations (Given a Table)

REMEMBER: $y = mx + b$

"m" stands for the _____ of the line.

"b" stands for the _____ of the line.

If you are given a table of values, and you have verified that the table represents a linear relationship (there is a constant rate of change), you can find both the slope and y-intercept from that table and write the equation of that line.

- To find the **slope** (rate of change), use the formula —
- To find the **y-intercept** (initial value), find the coordinate point (x,y) in which the x-coordinate is 0. (0, __)

1)

x	y
-2	-4
0	2
2	8
4	14
6	20

slope: _____

y-intercept: _____

equation: _____

2)

x	y
-2	80
-1	70
0	60
1	50
2	40

slope: _____

y-intercept: _____

equation: _____

3)

x	y
-2	1
-1	0.5
0	0
1	-0.5
2	-1

slope: _____

y-intercept: _____

equation: _____

4)

x	y
1	5
2	10
3	15
4	20
5	25

slope: _____

y-intercept: _____

equation: _____

5)

x	y
-3	9
-1	7
1	5
3	3
5	1

slope: _____

y-intercept: _____

equation: _____

6)

x	y
3	2
6	7
9	12
12	17
15	22

slope: _____

y-intercept: _____

equation: _____

7)

x	y
-3	-2.5
-1	-1.5
1	-0.5
3	0.5
5	1.5

slope: _____

y-intercept: _____

equation: _____

Writing Linear Equations

Goals:

I have mastered level 2 when I can:

Write an equation given the slope and y-intercept

Write an equation from a table

Write the slope-intercept form of the equation of each line given the slope and y-intercept.

1) Slope $= \frac{9}{4}$, y-intercept $= -4$

2) Slope $= -\frac{7}{4}$, y-intercept $= 5$

3) Slope $= 2$, y-intercept $= 4$

4) Slope $= -\frac{1}{2}$, y-intercept $= -2$

Write an equation in slope-intercept form for each table below. Show how you found the slope and y-intercept.

i.

x	y
0	0
1	2.5
2	5
3	7.5
4	10

ii.

x	y
0	6
1	7
2	8
3	9
4	10

iii.

x	y
0	−1.5
1	1.5
2	4.5
3	7.5
4	10.5

iv.

x	y
0	3
1	−1
2	−5
3	−9
4	−13

v.

x	y
1	1
2	5
3	9
4	13
5	17

Write a linear equation for each table relating x and y.

a.

x	0	3	6	10
y	2	8	14	22

b.

x	0	3	6	10
y	20	8	−4	−20

c.

x	2	4	6	8
y	5	8	11	14

d.

x	0	3	6	9
y	20	11	2	−7

Determine if the table represents a linear relationship, if yes, write an equation in slope-intercept form.

a.

x	2	4	6	8	10	12	14
y	0	1	2	3	4	5	6

b.

x	1	2	3	4	5	6	7
y	0	3	8	15	24	35	48

c.

x	1	4	6	7	10	12	16
y	2	−1	−3	−4	−7	−9	−13