

Level 2:

Goals:

I have mastered level 2 when I can:

Write an equation given the slope and y-intercept

Write an equation from a table

Notes:

Big Ideas

Examples/Details

Definition of

Practice:

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

1) Slope = $\frac{5}{2}$, y-intercept = 0

2) Slope = 1, y-intercept = 1

3) Slope = $-\frac{7}{2}$, y-intercept = 3

4) Slope = -1, y-intercept = -2

Find the slope and y-intercept for each table, and then write an equation.

<i>x</i>	0	1	2	3	4
<i>y</i>	0	2	4	6	8

<i>x</i>	0	1	2	3	4
<i>y</i>	3.5	4.5	5.5	6.5	7.5

<i>x</i>	1	2	3	4	5
<i>y</i>	1	3	5	7	9

<i>x</i>	0	1	2	3	4
<i>y</i>	5	3	1	-1	-3

<i>x</i>	2	3	4	5	6
<i>y</i>	-11	-14	-17	-20	-23

<i>x</i>	-3	-2	-1	0
<i>y</i>	7	5	3	1

Practice #1

Write a linear equation in slope-intercept form for the situation described below.

James and Shani share a veterinary practice. They each make farm visits two days a week. They take cellular phones on these trips to keep in touch with the office. James makes his farm visits on weekdays. His cellular phone rate is \$14.95 a month plus \$0.50 a minute. Shani makes her visits on Saturday and Sunday and is charged a weekend rate of \$34 a month.

- a. Write an equation for each billing plan.
- b. Is it possible for James's cellular phone bill to be more than Shani's? Explain how you know this.

Practice #2

The following tables represent the costs from two skating companies: Rollaway Skates and Wheelie's Skates and Stuff.

Rollaway Skates

Number of People	Cost
0	\$0
1	\$5
2	\$10
3	\$15
4	\$20
5	\$25
6	\$30
7	\$35
8	\$40

Wheelie's Skates and Stuff

Number of People	Cost
0	\$100
1	\$103
2	\$106
3	\$109
4	\$112
5	\$115
6	\$118
7	\$121
8	\$124

a. For each company, explain why the relationship between the number of people and cost is linear?

b. For each company write an equation for the cost and number of people in slope-intercept form.

- c. Use Desmos.com to create a graph of the two equations. Create a sketch of the graph, showing where the lines cross.

Describe when Rollaway Skates is cheaper and when Wheelie's is cheaper.

Sketch of the Graph

Worksheet Level 2: 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

REVIEW Level 2: Writing Linear Equations

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

1) Slope = 1, y-intercept = -4

2) Slope = 4, y-intercept = 4

Decide if each table is a linear relationship. If yes, then write an equation in slope-intercept form.

x	y
0	8
2	14
3	17
5	23

x	y
-3	-17
-1	-11
1	-5
3	1

x	y
-3	18
-1	6
1	-6
3	-18

x	y
5	-2
7	0
9	2
11	4

Write a linear equation in slope-intercept form for each situation described below.

A

Anchee and Jonah earn weekly allowances for doing chores over the summer.

- Anchee's father pays her \$5 each week.
- Jonah's mother paid him \$20 at the beginning of the summer and now pays him \$3 each week.

B

At noon, the temperature is 30°F . For the next several hours, the temperature falls by an average of 3°F an hour.

- Write an equation for the temperature T , n hours after noon.
- What is the y-intercept of the line the equation represents? What does the y-intercept tell us about this situation?
- What is the slope of the line the equation represents? What does the slope tell us about this situation?