Name: _____ Date: _____

Writing Linear Equations from Context

1. a. You decide you would like to become a swimmer and sign up for lessons at the local community pool. The registration fee is $15, and you will be charged an additional $10 per week for lessons.

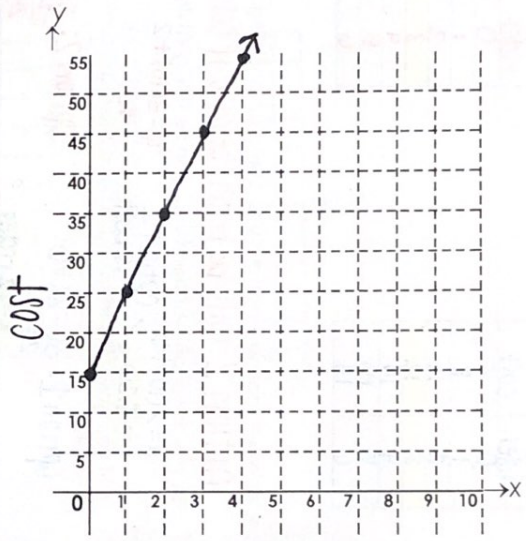
$y = 10x + 15$

b. Identify the variables in this situation:

x: # of weeks y: total cost

c. Create a Table and Graph:

x (weeks)	y (cost)
0	15
1	25
2	35
3	45
4	55
5	65
6	75



d. If your parents agree to donate $175 toward your swimming lessons, how many lessons can you attend before you run out of money?

total cost "y"

$y = 10x + 15$

$175 = 10x + 15$

$-15 \quad -15$

$\frac{160}{10} = \frac{10x}{10}$

$x = 16$

You can attend 16 weeks of lessons for $175.

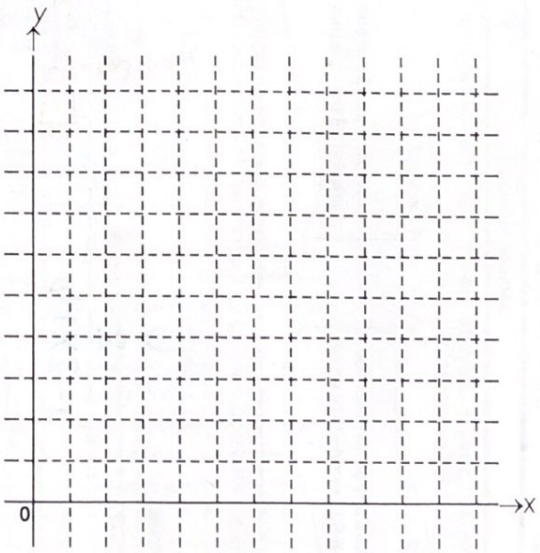
2. a. You got a party bag of skittles for your birthday with 250 skittles inside. You plan to eat five skittles every day until the box is empty.

$y = -5x + 250$

b. Identify the variables in this situation:

c. Create a Table and Graph:

x (days)	y (skittles)
0	250
1	245
2	240
3	235
4	230
5	225
6	220



d. How many days until the bag is empty?

50 days

Decision Making

A new amusement park just opened in Albany called "Crazy Adventures." The park offers its customers two admission options to choose from:

Option 1

Customers pay $6 to enter the park and $2 per ride they go on.

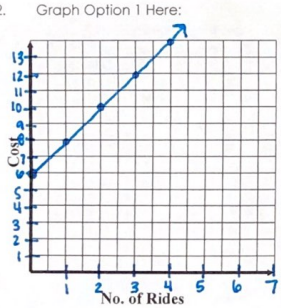
Option 2

Customers pay $2 to enter the park and $3 per ride they go on.

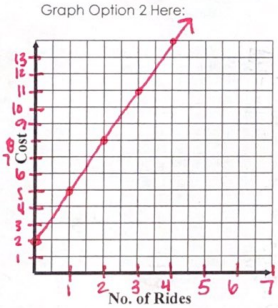
1. For each option, state the y-intercept and slope, and write an equation to describe the situation where y is the total cost and x is the number of rides the customer goes on.

	Option 1	*Option 2*
y-intercept	6	2
slope	2	3
equation	$y=2x+6$	$y=3x+2$

2. Graph Option 1 Here:



Graph Option 2 Here:



3. Create a Table for Option 1:

x (rides)	y (cost)
0	6
1	8
2	10
3	12
4	14
5	16
6	18

Create a table for Option 2:

x (rides)	y (cost)
0	2
1	5
2	8
3	11
4	14
5	17
6	20

4. a. Which option is better if you only plan on riding 3 rides for the night?

Option 2 will be better because it costs $11, vs. Option 1 for $12.

b. Which option is better if you plan on riding 10 rides?

$y=2(10)+6$ $=\$26$ ← Option 1 is better $y=3(10)+2$ $=32$

c. If you have $30 to spend, what is the maximum number of rides possible?

Option 1: $30=2x+6$, $24=2x$, $x=12$ rides

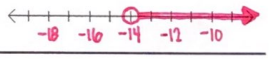
Option 2: $30=3x+2$, $-2 \quad -2$, $28=3x$, $x \approx 9.3$ Max of 9 rides

Review

5. Solve $y=\frac{x+b}{4}$ for x.

A. $x=4(y-b)$ B. $x=4(y+b)$ (C.) $x=4y-b$ D. $x=4y+b$

6. Find the solution for the inequality $-4(x+3)-2x<72$.



7. Identify the slope and y- intercept of $3x+y=-1$.

(A.) slope: -3 , y-intercept: -1

B. slope: 3 , y-intercept: -1

C. slope: -1/3, y-intercept: -1

D. slope: 1/3, y-intercept: -1