#71

Name Key

Math 8R

Date _____

Period _____

Real World Applications - Tables

1. Dominique saves the same amount of money each month in her bank's savings account. The amount of money she saved after different numbers of months is shown in the following table.

Months of savings, x	Total Amount saved (in $), y
3	400
5	1000
7	1600
9	2200

Part A: Determine the **rate of change** for the function. 300

(3, 400) (5, 1000)
x_1 y_1 x_2 y_2

$m = \frac{y_2 - y_1}{x_2 - x_1}$ $m = \frac{1000-400}{5-3}$ $m = \frac{600}{2}$ $m = 300$

Part B: Determine the **y-intercept** for the function. −500

$y = mx + b$ (3, 400) $m = 300$
x y

$400 = 300(3) + b$

$400 = 900 + b$

$-900 \quad -900$

$-500 = b$

Part C: Write the **equation** that represents this function in y= mx + b form. $y = 300x - 500$

$y = mx + b$

$m = 300$

$b = -500$

2. Use the table below to answer the questions that follow.

number of sodas	bags of popcorn
0	10
3	8
6	6
9	4
12	2
15	0

Part A: Determine the **rate of change** for the function. $-\frac{2}{3}$

$(0,10)$ $(3,8)$
x_1, y_1 $x_2 y_2$

$m = \frac{y_2 - y_1}{x_2 - x_1}$ $m = \frac{8-10}{3-0}$ $m = -\frac{2}{3}$

Part B: Determine the **y-intercept** for the function. 10

$y = mx + b$ $(0,10)$ $m = -\frac{2}{3}$
x y

$10 = -\frac{2}{3}(0) + b$

$10 = 0 + b$

$b = 10$

Part C: Write the **equation** that represents this function in y= mx + b form. $y = -\frac{2}{3}x + 10$

$y = mx + b$
$m = -\frac{2}{3}$

$B = 10$

3. Use the table below to answer the questions that follow.

Day	Height (mm)
1	0
3	4
5	8
7	12
9	16

Part A: Determine the **rate of change** for the function. 2

(1, 0) (3, 4)
x_1, y_1 x_2, y_2

$m = \frac{y_2 - y_1}{x_2 - x_1}$ $m = \frac{4-0}{3-1}$ $m = \frac{4}{2}$ $m = 2$

Part B: Determine the **y-intercept** for the function. -2

$y = mx + b$ (1, 0) $m = 2$
x y

$0 = (2)(1) + b$
$0 = 2 + b$
$-2 \quad -2$
$-2 = b$

Part C: Write the **equation** that represents this function in y= mx + b form. $y = 2x - 2$

$m = 2$

$B = -2$

4. The table below represents the price for purchasing a certain number of donuts at "Phil'd Up Doughnuts".

Phil'd Up Doughnuts

Boxing fee included in price!

Decorative Doughnuts	Price
2	$9
4	$13
6	$17
8	$21
10	$25
12	$29

Part A: Determine the **rate of change** for the function. 2

(2, 9) (4, 13)
x_1 y_1 x_2 y_2

$m = \frac{y_2 - y_1}{x_2 - x_1}$ $m = \frac{13 - 9}{4 - 2}$ $m = \frac{4}{2}$ $m = 2$

Part B: Determine the **y-intercept** for the function. 5

$y = mx + b$ (2, 9) $m = 2$
x y

$9 = 2(2) + b$

$9 = 4 + b$

$-4 \quad -4$

$5 = b$

Part C: Write the **equation** that represents this function in y= mx + b form. $y = 2x + 5$

$y = mx + b$

$m = 2$

$B = 5$

5. The table below shows the total cost in cellular service over different numbers of months.

Months of service, x	Total Cost (in $), y
2	100
4	600
6	1100
8	1600

Part A: Determine the **rate of change** for the function. 250

(2, 100) (4, 600)
x_1 y_1 x_2 y_2

$m = \frac{y_2 - y_1}{x_2 - x_1}$ $m = \frac{600-100}{4-2}$ $m = \frac{500}{2}$ $m = 250$

Part B: Determine the **y-intercept** for the function. -400

$y = mx + b$ (2, 100) $m = 250$
x y

$100 = 250(2) + b$
$100 = 500 + b$
$-500 \quad -500$
$-400 = b$

Part C: Write the **equation** that represents this function in y= mx + b form. $y = 250x - 400$

$y = mx + b$
$m = 250$

$B = -400$