

## Problem 2.2

**Standard form of a line  $y=mx + b$**

**y is dependent variable**

**x is independent variable**

**M is slope/pattern in table/constant rate of change**

**B is the y intercept/starting point**

### Part A

#### Squeaky Clean Car Wash Charges

Time	5	10	15	20	25
Charge	\$8	\$13	\$18	\$23	\$28

1. How do you know that this is a linear relationship? \_\_\_\_\_  
\_\_\_\_\_
2. The slope is \_\_\_\_\_  
The y-intercept is \_\_\_\_\_
3. The equation for this line is \_\_\_\_\_

### Part B

Looking at the graph on page 28, write an equation for the charge plan at Euclid's.

\_\_\_\_\_

y represents \_\_\_\_\_

\_\_\_\_\_ represents \_\_\_\_\_

x represents \_\_\_\_\_

\_\_\_\_\_ represents \_\_\_\_\_

### Part C

Look at the receipts on page 29. Let charge  $c$  be your  $y$  and time  $t$  be your  $x$ . The relationship between  $(x,y)$  is linear.

1. Each receipt represents a point  $(x,y)$  on the line. Find the coordinates of the two points. (\_\_\_\_\_, \_\_\_\_\_)
2. What is the slope of this line \_\_\_\_\_. What is the y-intercept of this line \_\_\_\_\_.
3. Write an equation for this line. \_\_\_\_\_

### Part D

Write an equation for the line with slope  $-3$  that passes through the point  $(4,3)$ .

\_\_\_\_\_

**Part E**

Write an equation for the line with points (4,5) and (6,9). \_\_\_\_\_

**Part F**

Suppose you want to write an equation of the form  $y=mx+b$  to represent a linear relationship. What is your strategy if you are given...

1. a description of the relationship in words? \_\_\_\_\_

\_\_\_\_\_

2. two or more (x,y) values or a table of (x,y) values?

\_\_\_\_\_

\_\_\_\_\_

3. a graph showing points with coordinates? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_