Writing Linear Equations from Word Problems - Part I

Directions: Answer the questions about each of the following scenarios to help you write a linear equation. Underline key words as you are reading through the problems.

Task 1

The ABC Telephone Company charges a flat rate of $12 to provide service to a residential customer. Local calls are free, but long distance calls are $0.10 per minute.

1) How much would the company charge you for one month if you only make local calls, and no long distance calls?

2) How much does the company charge you for one month if you make one 10-minute long distance phone call? Show your work below:

long distance _____ + flat rate _____ = total

_____ + _____ =total

I would pay _____ for one month and a 10-minute long distance call.

3) How much would the company charge for one month if you have 30 minutes in long distance phone calls? Show your work below:

long distance _____ + flat rate _____ = total

_____ + _____= total

I would pay _____ for one month with 30 minutes in long distance calls.

4) Put the above information in to the table below and continue the table:

# of long distance minutes	**long distance +** $0.10 multiplied by # of long distance minutes	**flat rate**	**= total**
0 minutes	$0.10 (0 minutes) +	$12	$12
10 minutes			
30 minutes			
80 minutes			

5) In the table on the previous page, the _____ column never changed (remained constant) and the _____ column changed depending upon the number of long distance minutes.

6) The linear function that models this situation is: $y = 0.10x + 12$.

Why is 0.10 the number multiplied by x? In other words, what does the x mean in terms of the equation? _____

Why does the 12 never change? Because it is a _____.

Task 2

Use what you learned in Task 1 to set up an equation for Task 2.

Java-Chip, an internet café and coffee shop, charges $3 per hour plus an initial fee of $8 to use one of its computers.

1) Complete the table below:

# of hours	**charge based upon hours +**	**initial fee**	**= total (y)**
1 hour			
2 hours			
3 hours			
6 hours			

2) In your table, what number stays the same each time? _____

What value is changing each time? _____ It is changing because _____.

3) Using what you learned in Task 1, in a linear equation, which number should be multiplied by x? _____. The constant would be _____.

4) The equation is: $y =$ _____.