**AFM: Linear Application Practice Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. Tim earns $7 an hour working at McDonald’s. He also was given a signing bonus when he started of $25. Write an equation that represents Tim’s salary at McDonald’s.
2. The table below represents the cost of renting a movie for x amount of days. Write an equation that represents the cost of renting a movie.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Days Rented (x) | 0 | 1 | 2 | 3 | 4 |
| Cost to Rent (y) | 12 | 15 | 18 | 21 | 24 |

b) What is the slope? What does it represent in the context of this problem?

1. Some scientists believe that the average surface temperature of the world has been rising steadily. The average surface temperature is given by

$$T=0.02t+7.50$$

 where *T* is temperature in degrees Celsius and *t* is the time in years since 1990.

* 1. Find the slope. What does it represent?
	2. What does the 7.50 represent?
1. A pool is being drained such that the amount of water (in gallons) at any given time (in min) can be found by y = 20000 – 400x.
	1. What is the slope and what does the slope mean in terms of this application?
	2. What is the y-intercept and what does it represent in this application?
	3. What is the x-intercept and what does it represent in this application?
2. A small business buys a computer for $4000. After 4 years the value of the computer is expected to be $200. For accounting purposes, the business uses linear depreciation to assess the value of the computer at a given time. This means that if V is the value of the computer at time t, then a linear equation is used to relate V and t.
	1. Find a linear equation that relate V and t.
	2. Find the depreciated value of the computer 3 years from the date of purchase.
3. A candy store owner finds that if she produces x lollipops in a month her production cost is given by the equation y=0.4x + 1200 (where y is measured in dollars).
	1. What does the slope mean in terms of this application?
	2. What does the y-intercept of the graph represent in terms of this application?
4. The monthly cost of driving a car depends on the number of miles driven. Lynn found that in May her driving cost was $380 for driving 480 miles and in June her cost was $460 for 800 miles.
	1. Express the monthly cost C in terms of the distance driven, d assuming that a linear relationship gives a suitable model.
	2. Use part (a) to predict the cost of driving 1500 miles per month
	3. What is the slope and what does the slope of the line represent?
	4. What does the y-intercept of the graph represent?