**Notes**

1. Complete the table below.

|  |  |  |  |
| --- | --- | --- | --- |
| **Equation** | **Linear –**  **Yes or No?** | **Slope** | **Vertical Intercept** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

1. The value of a car, in the year 1990, when it was new, was $18,000. Each year the value decreases by $1500.
   1. Define the variables.
   2. Write an equation *using function notation* to represent the situation.
   3. Determine the value of the car in the year 1997.

1. The relationship between the number of payments ***P*** made and the balance ***B*** (in dollars) of a car loan can be represented by the following table.

|  |  |
| --- | --- |
| **P: Number of Monthly Payments** | **B: Amount of Loan Balance ($)** |
| 0 | 10,800 |
| 4 | 9,600 |
| 8 | 8400 |

a. Based on the table, write an equation for the amount of the car loan balance ***B*** as a function of the number of monthly payments ***P***. Use function notation.

b. What is the monthly car payment?

1. What was the initial balance of the car loan?
2. How many monthly car payments are needed to produce a balance of zero?
3. Sketch a graph of this function.



**Definition: Horizontal Intercept**

**Domain and Range Practice**

Refer back to your Day 2 notes for definitions of domain and range as well as appropriate notation.

|  |  |
| --- | --- |
| **Scenario** | **Using Proper Mathematical Notation** |
| |  |  | | --- | --- | | x | y | | 1 | 4 | | 2 | 5 | | 3 | 8 | | Domain: |
| Range: |
| 1. The height of a ball as it is thrown into the air as a function of the time in seconds. | Domain: |
| Range: |

|  |  |
| --- | --- |
|  | Domain: |
| Range: |
| 1. The Car Loan Balance Question (#3) | Domain: |
| Range: |

**Additional Practice**

1. The number of napkins, *N*, used in a restaurant is , where *C* is the number of customers.
   1. Does this equation represent a linear function? If so, identify the slope and vertical intercept.
   2. Interpret the slope in the context of the problem.
   3. Interpret the vertical intercept in the context of the problem.
   4. Evaluate and interpret .
   5. Solve and interpret .