Notes

**Definition: Function**

1. **Circle** the tables and graphs below that represent functions. Explain.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Table a. | |  | Table b. | |  | Table c. | |
| Input | Output |  | Input | Output |  | Input | Output |
| 1 | 7 |  | 1 | 6 |  | 1 | 7 |
| 2 | 8 |  | 2 | 6 |  | 1 | 8 |
| 3 | 11 |  | 3 | 6 |  | 2 | 11 |

|  |  |
| --- | --- |
|  |  |
|  |  |

1. Is the following relationship a function? Explain your reasoning.
   1. The amount of snow, in inches, that falls in Durango as a function of the day of the year. Assume a time period of one year.
   2. The day of the year as a function of the amount of snow, in inches, that falls in Durango. Assume a time period of one year.

**Definition: Function Notation**

1. Given is the number of gallons of paint needed to cover a house of area *A* in ft2,
   1. Define the independent and dependent variables.
   2. Explain the meaning of the following equation: .
2. Given the function ,
   1. Evaluate .
   2. Fill in the blanks below with either “x” or “y” so as to reword part a into a question:

* What is the value of \_\_\_\_\_\_ when \_\_\_\_\_\_ is 0?
  1. Solve 
  2. Fill in the blanks below with either “x” or “y” so as to reword part c into a question:
* What is the value of \_\_\_\_\_\_ when \_\_\_\_\_\_ is 3?

1. The height, *h*, of the soccer ball in feet as a function of time, *t*, in seconds is modeled by the graph:



1. Evaluate .
2. Interpret your answer from part (a) within the context of the situation.
3. Solve .
4. Interpret your answer from part (c) within the context of the situation.
5. The following table shows the amount of garbage, , in millions of tons, produced in the U.S. as reported by the EPA.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ***t*: years since 1900** | 60 | 65 | 70 | 75 | 80 | 85 | 90 |
|  | 90 | 105 | 120 | 130 | 150 | 165 | 180 |

1. Evaluate 
2. Interpret your answer from **part a** within the context of the situation.
3. Solve .
4. Interpret your answer from **part c** within the context of the situation.

**Domain and Range**

**Definition: Domain**

**Definition: Range**

**Notation:**

1. For each of the following, write the domain and range using proper mathematical notation.
   1. #1 Graph f

Domain:

Range:

* 1. #5 Graph

Domain:

Range:

* 1. #6 Table

Domain:

Range: