**AMDM Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Unit IV Test- SAS1-SAS4**

**Use the following graph to answer the questions:**

1. Describe the form of the graph. Does it have a linear or nonlinear pattern?
2. Describe the direction of the graph. Does it exhibit a positive relationship, a negative relationship, or neither?
3. Describe the relative strength of the graph. Is it strongly associated or weakly associated?
4. Write a thorough description of the graph including: the subjects of the graph, variables of interest and at least two data points to help with your explanation.

**Jason is trying to save money for the down payment on a used motorcycle. His parents have said that, in an effort to help him save money, they will pay him 15% interest on the money Jason accumulates each month. At the moment, he has saved $300.**

1. Write a **recursive rule** to model the money Jason will accumulate with only the addition of the interest his parents play.
2. Write a **recursive rule** to model the money Jason will accumulate with only the addition of the interest his parents play.
3. How long will it take Jason to save at least $3,000 for the down payment?
4. Jason wants to speed the process up by adding $100 a month to his savings on top of his parents help. To help model the situation, write a recursive rule to help fill in the table. **Remember to show the process**

**Recursive Rule:**

|  |  |  |
| --- | --- | --- |
| **Months** | **Process** | **Dollars** |
| 0 |  |  |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |
| 6 |  |  |

**Suppose that a ball has a rebound percentage of 70 and the ball is dropped from a height of 6 ft. onto the concrete below.**

1. Make a table of the data.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Bounce # | 0 | 1 | 2 | 3 | 4 |
| Height of Bounce |  |  |  |  |  |

1. Make a scatterplot of the data. Be sure to label the axes and set an appropriate window.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
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1. Write a recursive rule for the data.
2. Write a closed-form function rule for the data.
3. What would the height of the 5th bounce of this ball be if the initial drop height is 12ft above the ground?
4. Find the rebound % given the bounce heights from the table.

|  |  |
| --- | --- |
| Bounce # | Height (ft) |
| 0 | 6 |
| 1 | 5.1 |
| 2 | 4.335 |
| 3 | 3.68 |
| 4 | 3.128 |