**Linear vs. Nonlinear Patterns**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Your grandmother is giving you the following two options for your birthday:

1. She will put $10.00 into your bank account on the day of your birthday and then $5.00 each month afterwards.

OR

1. She will put $1.00 into your bank account on the day of your birthday and then every month she will put enough in your account to double the total amount you have.

**Make a prediction:** Which option will mean more money for you?

**OPTION #1**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fill in a Table!   |  |  | | --- | --- | | **Month** | **Total**  **Amount** | | 0 |  | | 1 |  | | 2 |  | | 3 |  | | 4 |  | | 5 |  | | Graph It! | Find the Function Rule!  (Use function notation.) |

**OPTION #2**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fill in a Table!   |  |  | | --- | --- | | **Month** | **Total**  **Amount** | | 0 |  | | 1 |  | | 2 |  | | 3 |  | | 4 |  | | 5 |  | | Graph It! | Find the Function Rule!  (Use function notation.) |

1. How much money will be in your account in Month 6 for both options? How about month 10?
2. At which point will the option #1 exceed $100? What about option #2?
3. John says that for option 1 f(2)=20? Do you agree or disagree? Why or why not?
4. Determine the domain and range for:

Option 1:

Option 2:

1. How can we use graphs, tables, and function rules to help us make choices?