**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?