

Name: KEY Date: \_\_\_\_\_

**Linear vs. Exponential Functions Tasks**

Which option would you choose and why? \_\_\_\_\_

- Option 1: You can have \$1000 a year for twenty years
- Option 2: You can get \$1 the first year, \$2 the second year, \$4 the 3<sup>rd</sup>, doubling the amount each year for twenty years.

Use the chart below to figure out how much money you would gain at the end of 20 years for option 1 and Option 2.

Graph both options to see which will give you more money.

Year	Option 1	Option 2
1	\$1,000	\$1
2	\$2,000	\$1+\$2=\$3
3	\$3,000	\$3+\$4=\$7
4	4000	7+8=15
5	5000	15+16=31
6	6000	31+32=63
7	7000	63+64=127
8	8000	127+128=255
9	9000	511
10	10000	1023
11	11000	2,047
12	12000	4,095
13	13000	8,191
14	14000	16,383
15	15000	32,767
16	16000	65,535
17	17000	131,071
18	18000	262,143
19	19000	524,287
20	20000	1,048,575

