## Growing, Growing, Growing Assignment #3

1. Jenna is planning to swim in a charity swim-a-thon. Several relatives said they would sponsor her. Each of their donations is explained. Complete a table for each donation plan.

Grandmother: I will give you \$1 if you swim 1 lap, \$3 if you swim 2 laps, \$5 if you swim 3 laps, \$7 if you swim 4 lans and so on

you swift i lubs, and so on:							
Laps	1	2	3	4	5	20 laps	n laps (explicit equation)
Donation							

Mother: I will give you \$1 if you swim 1 lap, \$3 if you swim 2 laps, \$9 if you swim 3 laps, \$27 if you swim 4 laps, and so on.

Laps	1	2	3	4	5	20 laps	n laps (explicit equation)
Donation							

Aunt Lori: I will give you \$2 if you swim 1 lap, \$3.50 if you swim 2 laps, \$5 if you swim 3 laps, \$6.50 for 4 laps, and so on.

Laps	1	2	3	4	5	20 laps	n laps (explicit equation)
Donation							

Uncle Jack: I will give you \$1 if you swim 1 lap, \$2 if you swim 2 laps, \$4 if you swim 3 laps, \$8 if you swim 4 laps, and so on.

Laps	1	2	3	4	5	20 laps	n laps (explicit equation)
Donation							

2. Decide whether each donation pattern is exponential, linear, or neither.

Grandmother: Mother:

Uncle Jack: Aunt Lori:

Evaluate the following equations, when  $x = \{1, 2, 3, 4, 5\}$ . Organize your inputs and outputs into a table of values for each equation. Let x be the input and g(x) be the output.

$$3. \quad g(x) = 4^x$$

4. 
$$g(x) = (-3)^x$$

5. 
$$g(x) = -3^x$$
 6.  $g(x) = 10^x$ 

6. 
$$g(x) = 10$$

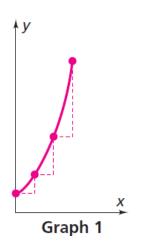
	х	g(x)
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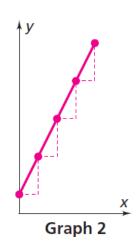
x	g(x)

х	g(x)

х	g(x)

- 7. The graphs at right represent  $y = 2^x$  and y = 2x + 1.
- **a**. Tell which equation each graph represents. Explain your reasoning.
- b. Which graph shows exponential growth? How do you know?





Study the pattern in each table and answer questions a and b.

3.

×	0	1	2	3	4	5
γ	10	12.5	15	17.5	20	22.5

- a. linear, exponential, or neither. Explain your reasoning.
- b. If the relationship is linear or exponential, give its explicit equation.

4.

×	0	1	2	3	4
У	1	6	36	216	1296

- a. linear, exponential, or neither. Explain your reasoning.
- **b**. If the relationship is linear or exponential, give its explicit equation.

5.

$$f(x) = x^2$$

- **a**. *linear*, exponential, or neither. Explain your reasoning.
- **b**. List the first 5 terms.

6.

$$f(x) = 2(2)^{x}$$

- **a**. *linear, exponential,* or *neither*. Explain your reasoning.
- **b**. List the first 5 terms.