

Name: Guide Date: _____

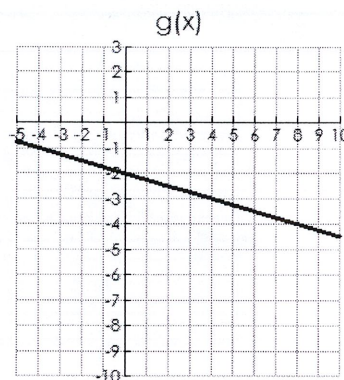
Comparing Linear and Exponential Functions

1. For the following two functions, write the equations of each and complete the chart using $<$, $>$, or $=$ to compare them.

$f(x) = -2x + 5$

$g(x) = -\frac{1}{4}x - 2$

x	f(x)
-3	11
-1	7
1	3
3	-1
5	-5



Characteristic of f(x)	$<$, $>$, or $=$	Characteristic of g(x)
y-intercept of f(x) = 5	$>$	y-intercept of g(x) = -2
f(4) = -3	$=$	g(4) = -3
Rate of Change of f(x) = -2	$<$	Rate of Change of g(x) = $-\frac{1}{4}$

2. Pertaining to the table at the right:

a) Find the average rate of change on the interval

$2 \leq x \leq 3$.

- A. 2 B. -2 C. 6.8 D. -6

b) Find the average rate of change on the interval

$4 \leq x \leq 5$.

- A. 2 B. -2 C. 6.8 D. -6

$\frac{y_2 - y_1}{x_2 - x_1} = \frac{8 - 10}{5 - 4} = \frac{-2}{1} = -2$

c) Find the average rate of change on the interval

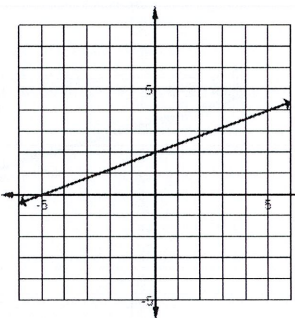
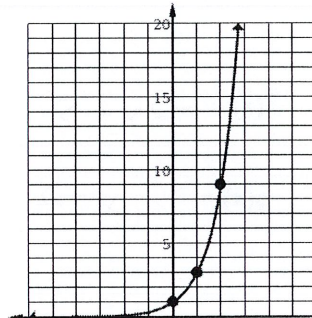
$3 \leq x \leq 4$.

- A. 2 B. -2 C. 6.8 D. -6

d) Is the function displayed in the table a linear function?

x	f(x)
1	21
2	18
3	16
4	10
5	8

Determine if the following representations are linear or exponential, identify the characteristics, and then write an equation.

<p>3.</p> 	<p>4.</p> <p>Kate started with 500 Instagram followers. Each week, she gained 150 more.</p>	<p>5.</p> 																						
<p>Linear or Exponential</p> <p>ROC from [0,5]:</p> $\frac{4-2}{5-0} = \frac{2}{5}$ <p>x-intercept: $(-5, 0)$</p> <p>y-intercept: $(0, 2)$</p> <p>Equation: $f(x) = \frac{2}{5}x + 2$</p>	<p>Linear or Exponential</p> <p>ROC from [0,4]:</p> <p>x-intercept:</p> <p>y-intercept:</p> <p>Equation: $f(x) =$</p>	<p>Linear or Exponential</p> <p>ROC from [1,2]:</p> <p>x-intercept:</p> <p>y-intercept:</p> <p>Equation: $f(x) =$</p>																						
<table border="1" data-bbox="203 1186 560 1312"> <tr> <td>X</td> <td>-1</td> <td>0</td> <td>1</td> <td>2</td> </tr> <tr> <td>y</td> <td>1/2</td> <td>2</td> <td>8</td> <td>32</td> </tr> </table>	X	-1	0	1	2	y	1/2	2	8	32	<p>7.</p> <p>Diego had 2 YouTube followers on his music channel. He dropped a new single, and each day after, his number of subscribers tripled.</p>	<table border="1" data-bbox="1039 1218 1364 1344"> <tr> <td>X</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>y</td> <td>9</td> <td>6</td> <td>3</td> <td>0</td> <td>-3</td> </tr> </table>	X	1	2	3	4	5	y	9	6	3	0	-3
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Do this 1st and the others are much easier