

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

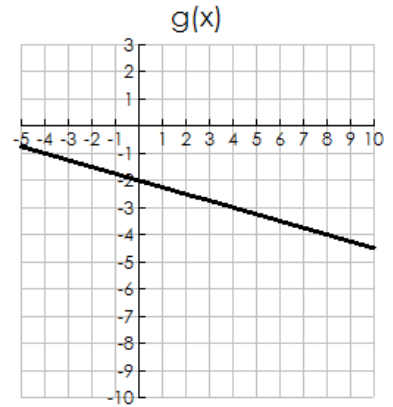
**Comparing Linear and Exponential Functions**

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

$f(x) =$

$g(x) =$

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) =		y-intercept of g(x) =
f(4) =		g(4) =
Rate of Change of f(x) =		Rate of Change of g(x) =

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

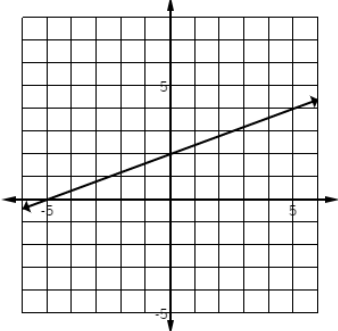
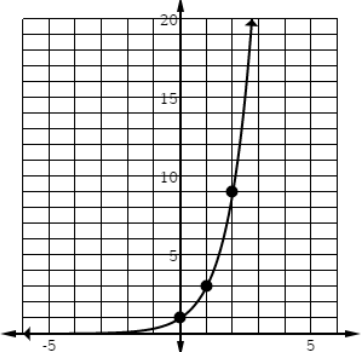
**c)** Find the average rate of change on the interval  $3 \leq x \leq 4$ .

- 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> <p>x-intercept:</p> <p>y-intercept:</p> <p>Equation: <math>f(x) =</math></p>	<p>Linear or Exponential</p> <p>ROC from [0,4]:</p> <p>x-intercept:</p> <p>y-intercept:</p> <p>Equation: <math>f(x) =</math></p>	<p>Linear or Exponential</p> <p>ROC from [1,2]:</p> <p>x-intercept:</p> <p>y-intercept:</p> <p>Equation: <math>f(x) =</math></p>																						
<table border="1" data-bbox="159 1213 545 1348"> <tbody> <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> </tbody> </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="1062 1251 1419 1386"> <tbody> <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> </tbody> </table>	X	1	2	3	4	5	y	9	6	3	0	-3
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