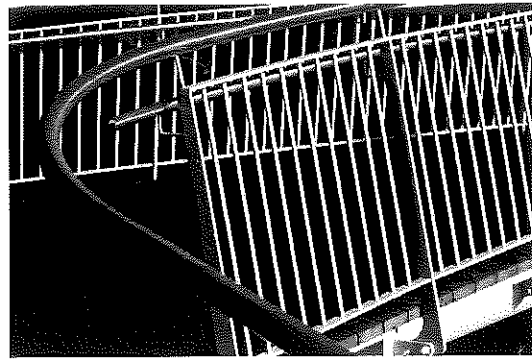


2.3 Linear, Exponential or Neither?

A Practice Understanding Task

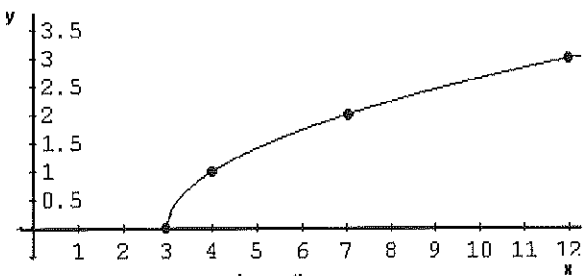


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<https://flic.kr/p/a8uzeA>

For each representation of a function, decide if the function is linear, exponential, or neither. Give at least 2 reasons for your answer.

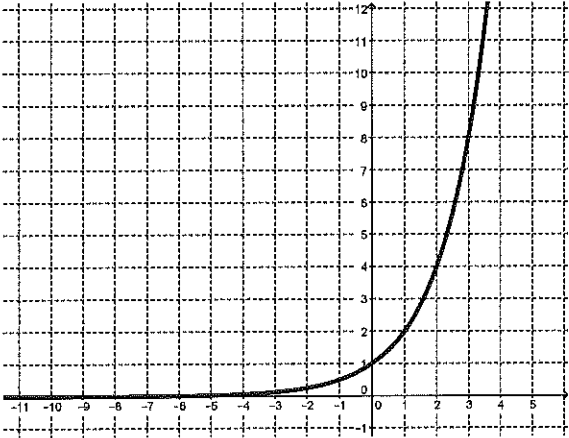
<p>1.</p>	<p>Linear Exponential Neither</p> <p>Why?</p>												
<p>2.</p> <p>Tennis Tournament</p> <table border="1" data-bbox="126 1297 727 1499"> <thead> <tr> <th>Rounds</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> </tr> </thead> <tbody> <tr> <td>Number of Players left</td> <td>64</td> <td>32</td> <td>16</td> <td>8</td> <td>4</td> </tr> </tbody> </table> <p>There are 4 players remaining after 5 rounds</p>	Rounds	1	2	3	4	5	Number of Players left	64	32	16	8	4	<p>Linear Exponential Neither</p> <p>Why?</p>
Rounds	1	2	3	4	5								
Number of Players left	64	32	16	8	4								

<p>3.</p> $y = 4x$	<p>Linear Exponential Neither</p> <p>Why?</p>
<p>4.</p> <p>This function is decreasing at a constant rate</p>	<p>Linear Exponential Neither</p> <p>Why?</p>
<p>5.</p> 	<p>Linear Exponential Neither</p> <p>Why?</p>

SECONDARY MATH 1 // MODULE 2

LINEAR & EXPONENTIAL FUNCTIONS - 2.3

<p>6. A person's height as a function of a person's age (from age 0 to 100)</p>	<p>Linear</p> <p>Why?</p>	<p>Exponential</p>	<p>Neither</p>												
<p>7.</p> $-3x = 4y + 7$	<p>Linear</p> <p>Why?</p>	<p>Exponential</p>	<p>Neither</p>												
<p>8.</p> <table border="1" data-bbox="217 1289 659 1524"> <thead> <tr> <th>x</th> <th>y</th> </tr> </thead> <tbody> <tr> <td>-2</td> <td>23</td> </tr> <tr> <td>0</td> <td>5</td> </tr> <tr> <td>2</td> <td>-13</td> </tr> <tr> <td>4</td> <td>-31</td> </tr> <tr> <td>6</td> <td>-49</td> </tr> </tbody> </table>	x	y	-2	23	0	5	2	-13	4	-31	6	-49	<p>Linear</p> <p>Why?</p>	<p>Exponential</p>	<p>Neither</p>
x	y														
-2	23														
0	5														
2	-13														
4	-31														
6	-49														

<p>9.</p> <table border="1" data-bbox="159 296 636 548"> <thead> <tr> <th>Height in Inches</th> <th>Shoe Size</th> </tr> </thead> <tbody> <tr> <td>62</td> <td>6</td> </tr> <tr> <td>74</td> <td>13</td> </tr> <tr> <td>70</td> <td>9</td> </tr> <tr> <td>67</td> <td>11</td> </tr> <tr> <td>53</td> <td>4</td> </tr> <tr> <td>58</td> <td>7</td> </tr> </tbody> </table>	Height in Inches	Shoe Size	62	6	74	13	70	9	67	11	53	4	58	7	<p>Linear Exponential Neither</p> <p>Why?</p>
Height in Inches	Shoe Size														
62	6														
74	13														
70	9														
67	11														
53	4														
58	7														
<p>10.</p> <p>The number of cell phone users in Centerville as a function of years, if the number of users is increasing by 75% each year.</p>	<p>Linear Exponential Neither</p> <p>Why?</p>														
<p>11.</p> 	<p>Linear Exponential Neither</p> <p>Why?</p>														

SECONDARY MATH 1 // MODULE 2

LINEAR & EXPONENTIAL FUNCTIONS – 2.3

<p>12. The time it takes you to get to work as a function the speed at which you drive</p>	<p>Linear</p> <p>Why?</p>	<p>Exponential</p>	<p>Neither</p>
<p>13.</p> $y = 7x^2$	<p>Linear</p> <p>Why?</p>	<p>Exponential</p>	<p>Neither</p>
<p>14. Each point on the graph is exactly $\frac{1}{3}$ of the previous point.</p>	<p>Linear</p> <p>Why?</p>	<p>Exponential</p>	<p>Neither</p>

15. $f(1) = 7, f(2) = 7, f(n) = f(n - 1) + f(n - 2)$	Linear	Exponential	Neither
16. $f(1) = 1, f(n) = \frac{2}{3}f(n - 1)$	Linear	Exponential	Neither

READY, SET, GO!
Name _____
Period _____
Date _____

READY

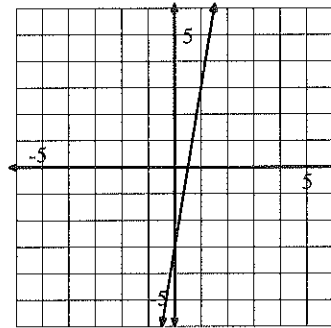
Topic: Comparing rates of change in both linear and exponential situations.

Identify whether situation "a" or situation "b" has a greater rate of change.

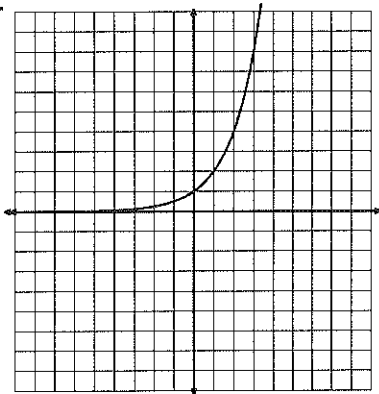
1. a.

x	y
-10	-48
-9	-43
-8	-38
-7	-33

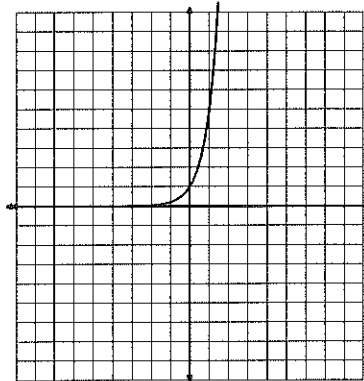
b.



2. a.



b.



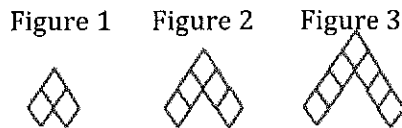
3. a. Lee has \$25 withheld each week from his salary to pay for his subway pass.

b. Jose owes his brother \$50. He has promised to pay half of what he owes each week until the debt is paid.

4. a.

x	6	10	14	18
y	13	15	17	19

b. The number of rhombi in each shape.



5. a. $y = 2(5)^x$

b. In the children's book, *The Magic Pot*, every time you put one object into the pot, two of the same object come out. Imagine that you have 5 magic pots.

SET

Topic: Recognizing linear and exponential functions.

Based on each of the given representations of a function determine if it is linear, exponential or neither.

6. The population of a town is decreasing at a rate of 1.5% per year.

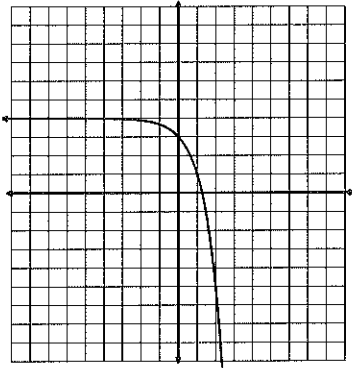
7. Joan earns a salary of \$30,000 per year plus a 4.25% commission on sales.

8. $3x + 4y = -3$

9. The number of gifts received each day of "The 12 Days of Christmas" as a function of the day. ("On the 4th day of Christmas my true love gave to me, 4 calling birds, 3 French hens, 2 turtledoves, and a partridge in a pear tree.")

11.

10.



Side of a square	Area of a square
1 inch	1 in ²
2 inches	4 in ²
3 inches	9 in ²
4 inches	16 in ²

GO

Topic: Geometric means

For each geometric sequence below, find the missing terms in the sequence.

12.

x	1	2	3	4	5
y	2				162

13.

x	1	2	3	4	5
y	1/9			-3	

14.

x	1	2	3	4	5
y	10				0.625

SECONDARY MATH I // MODULE 2
 LINEAR & EXPONENTIAL FUNCTIONS - 2.3

2.3

15.

x	1	2	3	4	5
y	g				gz^4

16.

x	1	2	3	4	5
y	-3				-243

Find the rate of change (slope) in each of the exercises below.

17.

x	$g(x)$
-5	11
-3	4
-2	0.5
0	-6

18.

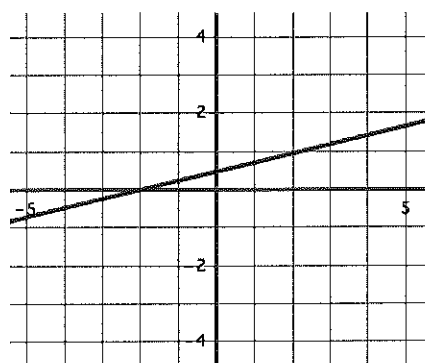
t	$h(t)$
3	13
8	23
18	43
23	53

19.

n	$f(n)$
-7	20
-5	24
-1	32
2	38

20. (2, 5) (8, 29)

21.



22. (-3, 7) (8, 29)