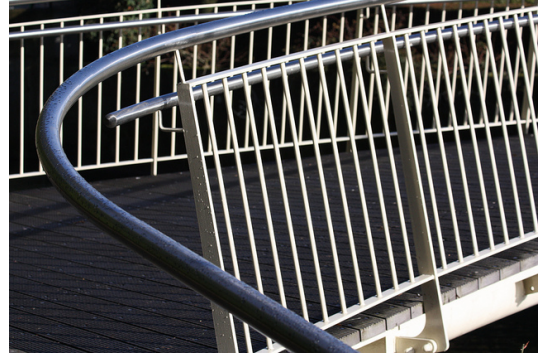


# 2.3 Linear, Exponential or Neither?

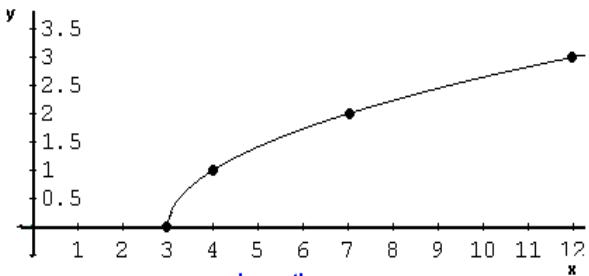
## A Practice Understanding Task



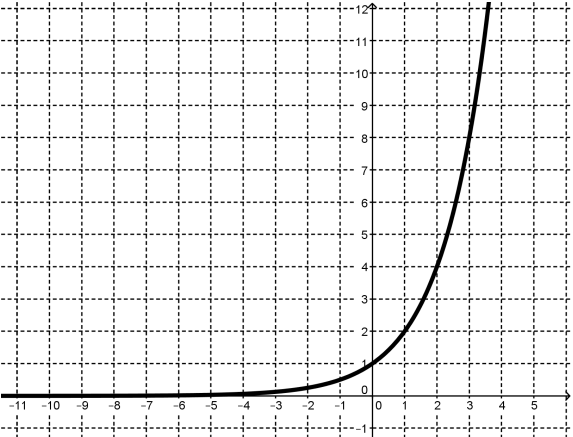
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<https://flic.kr/p/a8uzeA>

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="138 1302 738 1501"> <tr> <td>Rounds</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>Number of Players left</td> <td>64</td> <td>32</td> <td>16</td> <td>8</td> <td>4</td> </tr> </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>

<p>6. A person's height as a function of a person's age (from age 0 to 100)</p>	<p>Linear                  Exponential                  Neither</p> <p>Why?</p>												
<p>7.</p> $-3x = 4y + 7$	<p>Linear                  Exponential                  Neither</p> <p>Why?</p>												
<p>8.</p> <table border="1" data-bbox="225 1283 669 1516"> <thead> <tr> <th><math>x</math></th> <th><math>y</math></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                  Exponential                  Neither</p> <p>Why?</p>
$x$	$y$												
-2	23												
0	5												
2	-13												
4	-31												
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<p>9.</p> <table border="1" data-bbox="168 289 646 537"> <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>														

<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 <math>\frac{1}{3}</math> 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