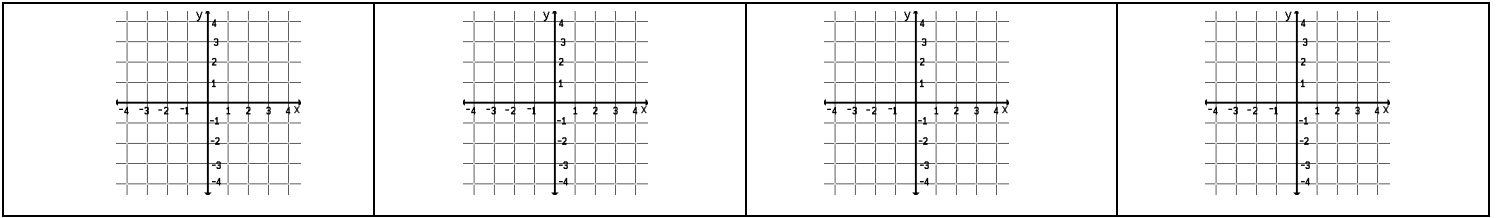
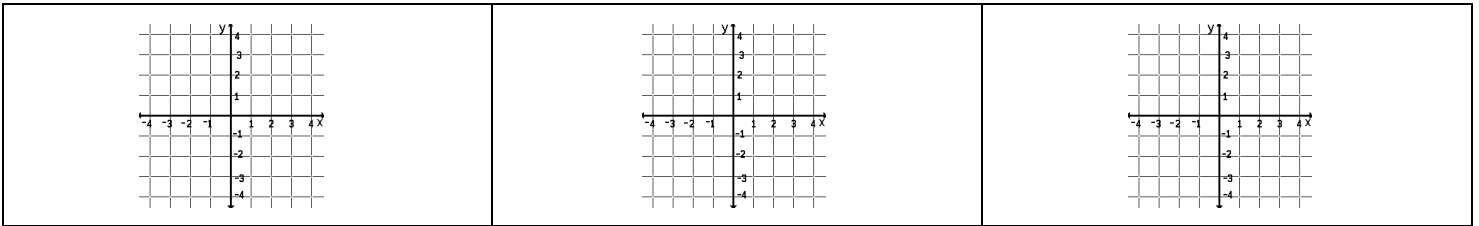


U9-8 Linear vs. Nonlinear Graphs

Linear



Non-linear



Graph the following functions to determine if they are **linear** or **nonlinear**.

1) $y = x + 1$

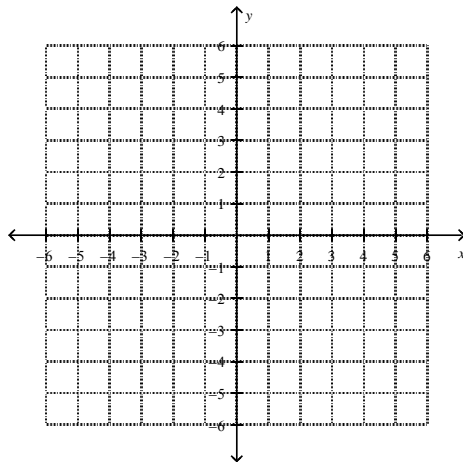
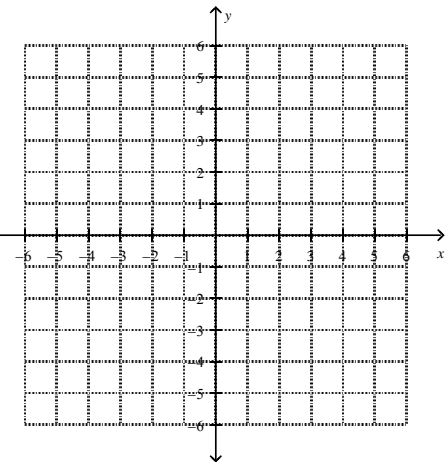
2) $y = x^2 + 1$

x input domain	y output range

x input domain	y output range

3) What are the differences between the two **graphs**?

4) What are the differences between the two **equations**?



Linear or Nonlinear

Linear or Nonlinear

U9-8 Linear vs. Nonlinear Graphs

Determine if the following tables represent a linear or nonlinear function.

<table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td style="width: 30px; text-align: center;">1)</td> <td style="width: 40px; text-align: center;">x</td> <td style="width: 40px; text-align: center;">y</td> </tr> <tr> <td></td> <td style="text-align: center;">0</td> <td style="text-align: center;">10</td> </tr> <tr> <td></td> <td style="text-align: center;">1</td> <td style="text-align: center;">21</td> </tr> <tr> <td></td> <td style="text-align: center;">2</td> <td style="text-align: center;">32</td> </tr> <tr> <td></td> <td style="text-align: center;">3</td> <td style="text-align: center;">43</td> </tr> <tr> <td colspan="3" style="text-align: center; padding: 10px;">Linear or Nonlinear</td> </tr> </table>	1)	x	y		0	10		1	21		2	32		3	43	Linear or Nonlinear			<table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <td style="width: 30px; text-align: center;">2)</td> <td style="width: 40px; text-align: center;">x</td> <td style="width: 40px; text-align: center;">y</td> </tr> <tr> <td></td> <td style="text-align: center;">3</td> <td style="text-align: center;">-5</td> </tr> <tr> <td></td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> </tr> <tr> <td></td> <td style="text-align: center;">5</td> <td style="text-align: center;">6</td> </tr> <tr> <td></td> <td style="text-align: center;">6</td> <td style="text-align: center;">11</td> </tr> <tr> <td colspan="3" style="text-align: center; padding: 10px;">Linear or Nonlinear</td> </tr> </table>	2)	x	y		3	-5		4	1		5	6		6	11	Linear or Nonlinear		
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Linear or Nonlinear																																					

Determine if the following equations are linear or nonlinear. How do you know?

Equation	Linear or Nonlinear	Reason
1) $y = 9 + 3x$		
2) $y = x^2 + 8$		
3) $y = x$		
4) $y = 2x^3 - 9$		