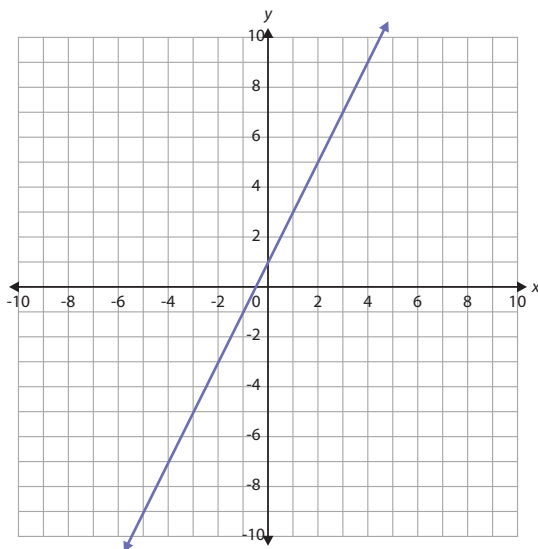


LINEAR VS. NONLINEAR: GRAPHS AND EQUATIONS

If a function has a constant rate of change, it is a **linear function**. The graph of a linear function will be a straight line. Linear equations can be written in the form $y = mx + b$.

Here is a graph of a linear function and its equation:

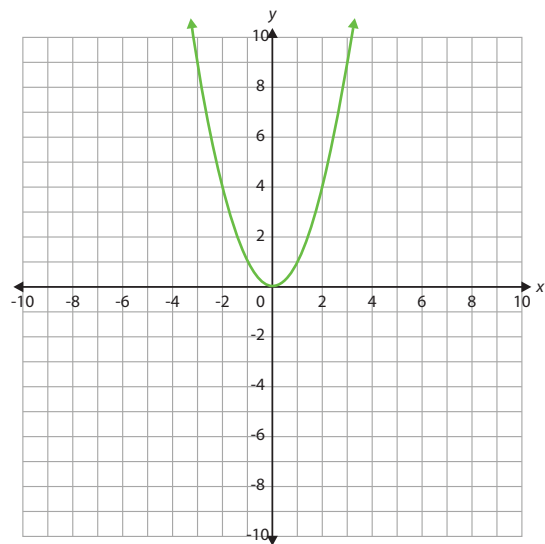
$$y = 2x + 1$$



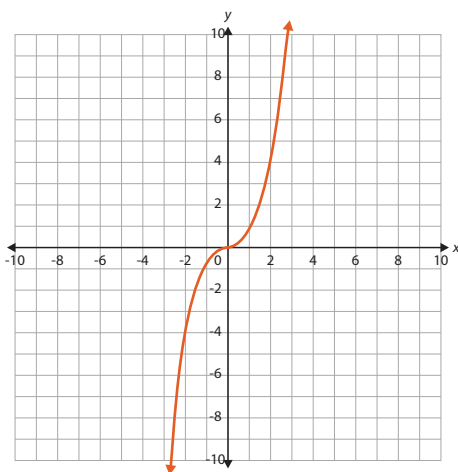
If a function does **not** have a constant rate of change, it is a **nonlinear function**. The graph of a nonlinear function will not be a straight line. Nonlinear equations cannot be written in the form $y = mx + b$.

Here is a graph of a nonlinear function and its equation:

$$y = x^2$$

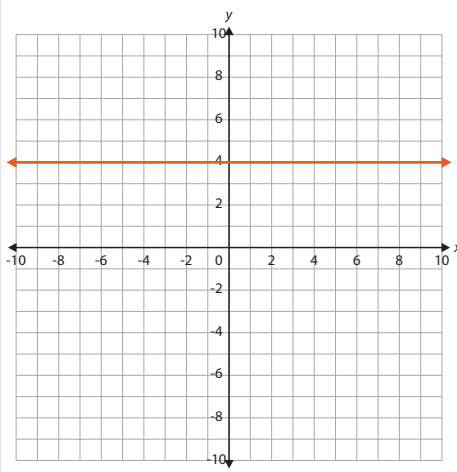


Determine whether each graph shows a linear or nonlinear function. Circle the correct answer.



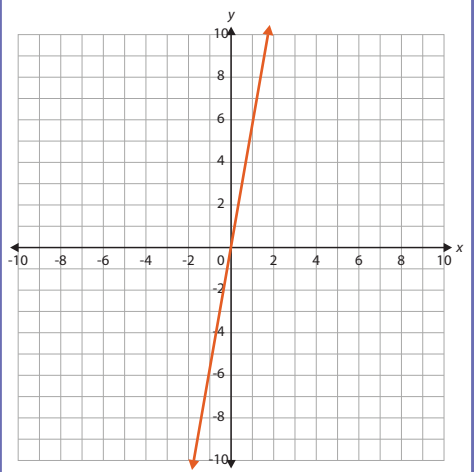
Linear

Nonlinear



Linear

Nonlinear

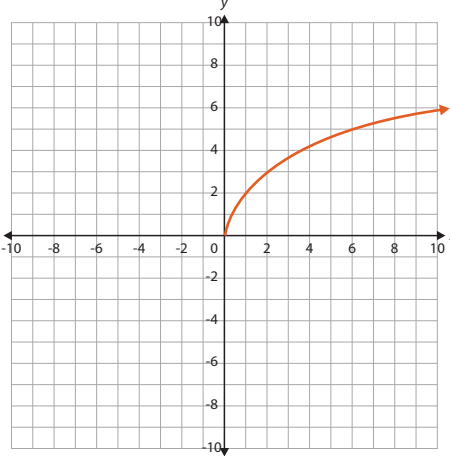
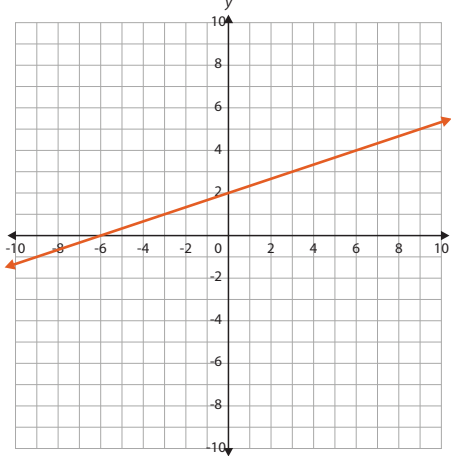
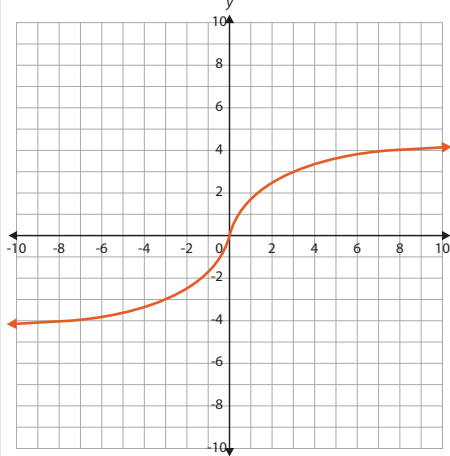
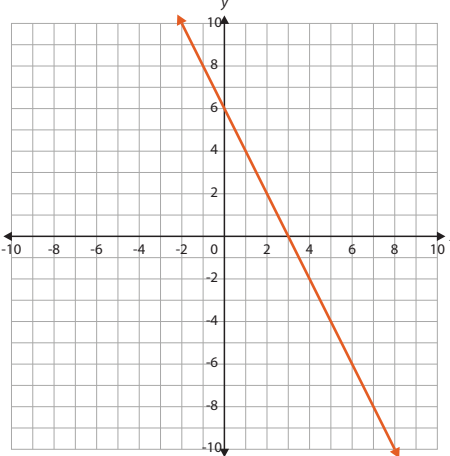
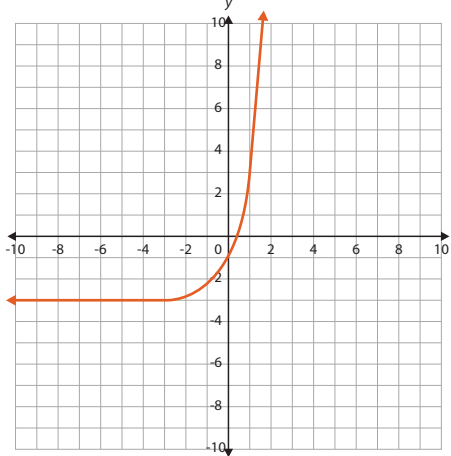
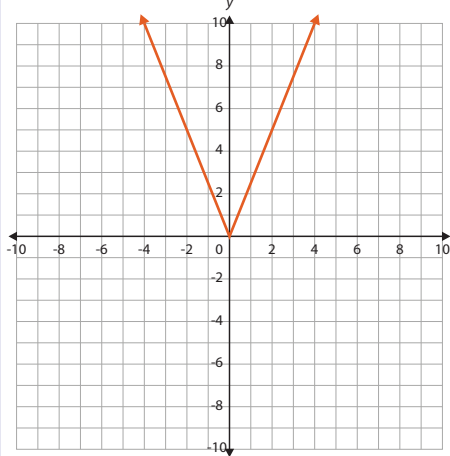


Linear

Nonlinear

LINEAR VS. NONLINEAR: GRAPHS AND EQUATIONS

Keep going! Determine whether each graph shows a linear or nonlinear function. Circle the correct answer.

 <p>Linear Nonlinear</p>	 <p>Linear Nonlinear</p>	 <p>Linear Nonlinear</p>
 <p>Linear Nonlinear</p>	 <p>Linear Nonlinear</p>	 <p>Linear Nonlinear</p>

Determine whether each equation shows a linear or nonlinear function. Circle the correct answer.

<p>$y = x + 9$</p> <p>Linear Nonlinear</p>	<p>$y = 3x^2$</p> <p>Linear Nonlinear</p>	<p>$y = -\frac{1}{2}x$</p> <p>Linear Nonlinear</p>
<p>$y = 4x^2 + 7$</p> <p>Linear Nonlinear</p>	<p>$4x + 2y = 10$</p> <p>Linear Nonlinear</p>	<p>$y = 6x^3 - 5x$</p> <p>Linear Nonlinear</p>