

Essential Question:

EVEN FUNCTIONS

1. Definition: If $f(-x) = \underline{\hspace{2cm}}$, then $f(x)$ is an even function.

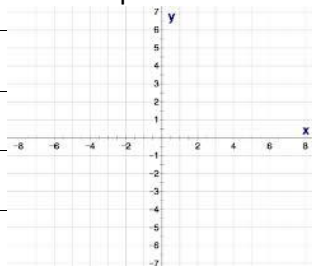
2. Graphs: a. The graph of an even function is symmetric about the _____.

This means that both sides of the y-axis are mirror images of each other.

b. If (a,b) is on the graph, so is _____.

3. An example of an even function: $f(x) = x^2$

a. Graph



b. The points (2,4) and (,) are on the graph.

c. $f(-x) =$

ODD FUNCTIONS

1. Definition: If $f(-x) = -f(x)$, then $f(x)$ is an odd function.

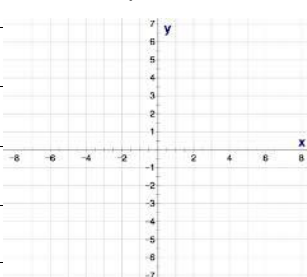
2. Graphs: a. The graph of an odd function is symmetric about the _____.

This means that:

b. If (a,b) is on the graph, so is _____.

3. An example of an odd function: $f(x) = 3x$

b. Graph

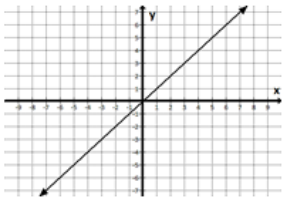
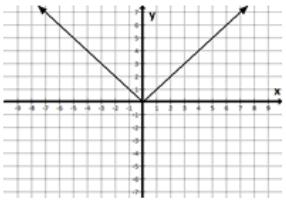
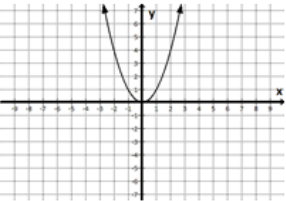
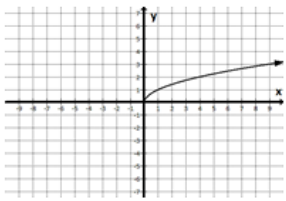
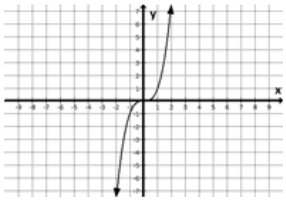
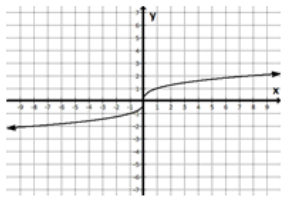
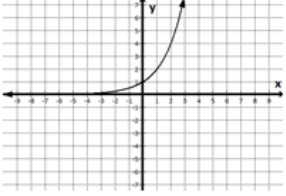
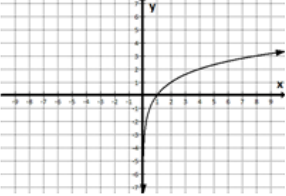
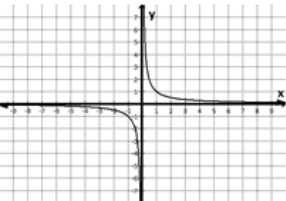
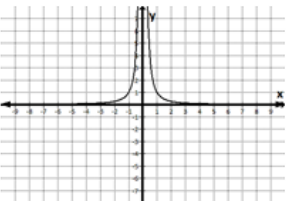
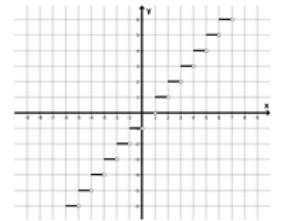
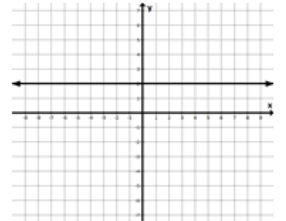


b. The points (2,6) and (,) are on the graph.

c. $f(-x) =$

Questions:

Notes:

Parent Function	Graph	Parent Function	Graph
$y = x$ Domain: Range: End Behavior: $x \rightarrow -\infty, y \rightarrow$ $x \rightarrow \infty, y \rightarrow$		$y = x $ Domain: Range: End Behavior: $x \rightarrow -\infty, y \rightarrow$ $x \rightarrow \infty, y \rightarrow$	
$y = x^2$ Domain: Range: End Behavior: $x \rightarrow -\infty, y \rightarrow$ $x \rightarrow \infty, y \rightarrow$		$y = \sqrt{x}$ Domain: Range: End Behavior: $x \rightarrow \infty, y \rightarrow$	
$y = x^3$ Domain: Range: End Behavior: $x \rightarrow -\infty, y \rightarrow$ $x \rightarrow \infty, y \rightarrow$		$y = \sqrt[3]{x}$ Domain: Range: End Behavior: $x \rightarrow -\infty, y \rightarrow$ $x \rightarrow \infty, y \rightarrow$	
$y = b^x, b > 1$ Domain: Range: End Behavior: $x \rightarrow -\infty, y \rightarrow$ $x \rightarrow \infty, y \rightarrow$		$y = \log_b(x), b > 1$ Domain: Range: End Behavior: $x \rightarrow 0^+, y \rightarrow$ $x \rightarrow \infty, y \rightarrow$	
$y = \frac{1}{x}$ Domain: Range: End Behavior: $x \rightarrow -\infty, y \rightarrow$ $x \rightarrow \infty, y \rightarrow$		$y = \frac{1}{x^2}$ Domain: Range: End Behavior: $x \rightarrow -\infty, y \rightarrow$ $x \rightarrow \infty, y \rightarrow$	
$y = \text{int}(x) = [x]$ Greatest Integer, Neither Domain: $(-\infty, \infty)$ Range: $\{y: y \in \mathbb{Z}\}$ (integers) End Behavior: $x \rightarrow -\infty, y \rightarrow -\infty$ $x \rightarrow \infty, y \rightarrow \infty$		$y = C$ ($y = 2$ in the graph) Domain: Range: End Behavior: $x \rightarrow -\infty, y \rightarrow$ $x \rightarrow \infty, y \rightarrow$	

Summary: