

Assignment

Write

Provide an example of each type of function.

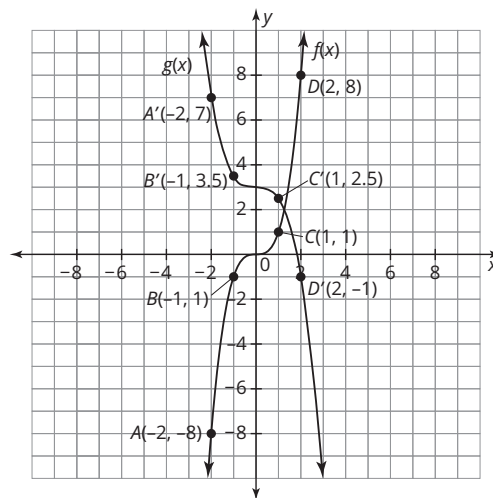
1. polynomial function
2. quartic function
3. quintic function

Remember

The function $g(x) = Af(B(x - C)) + D$ is the transformation function where the constants A and D affect the output values of the function and the constants B and C affect the input values of the function.

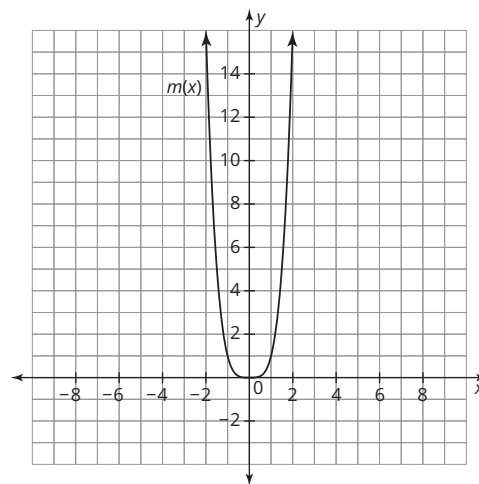
Practice

1. Analyze the graphs of the functions $f(x)$ and $g(x)$.
 - a. Write the equation for $f(x)$.
 - b. The function $g(x)$ is a transformation of the function $f(x)$. Describe the transformations performed on $f(x)$ that result in the function $g(x)$. Explain your reasoning.
 - c. Write the equation for $g(x)$.
 - d. Is the function $g(x)$ even, odd, or neither? Explain your reasoning.



2. The graph of the basic quartic function $m(x) = x^4$ is shown.
 - a. The function $h(x) = \frac{1}{4}(x - 6)^4$ is a transformation of $m(x)$. Complete the table.

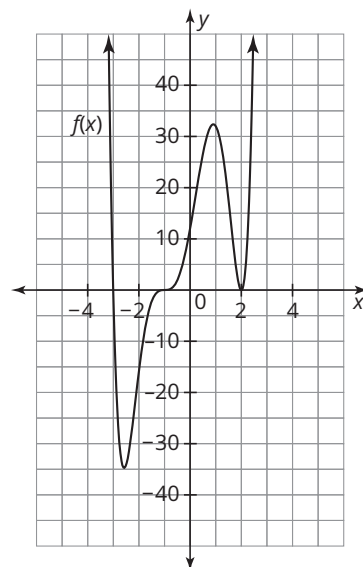
Reference Points on $m(x)$	→	Corresponding Points on $h(x)$
(x, y)	→	
$(-2, 16)$	→	
$(-1, 1)$	→	
$(0, 0)$	→	
$(1, 1)$	→	
$(2, 16)$	→	



- b. Graph the function $h(x) = \frac{1}{4}(x - 6)^4$ on the same coordinate plane as $m(x)$.
- c. Is the function $h(x)$ even, odd, or neither? Explain your reasoning.

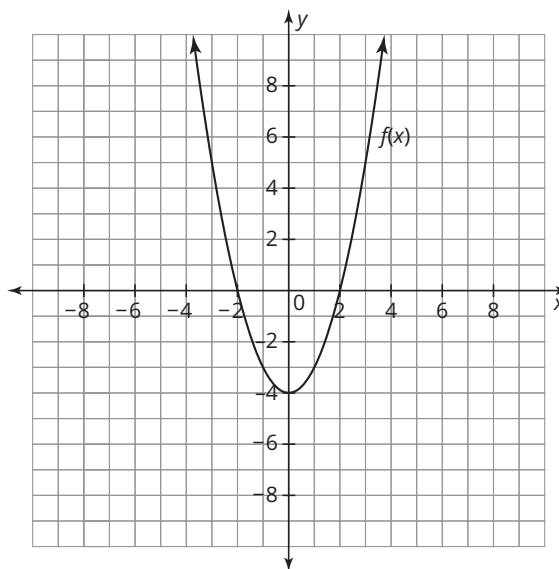
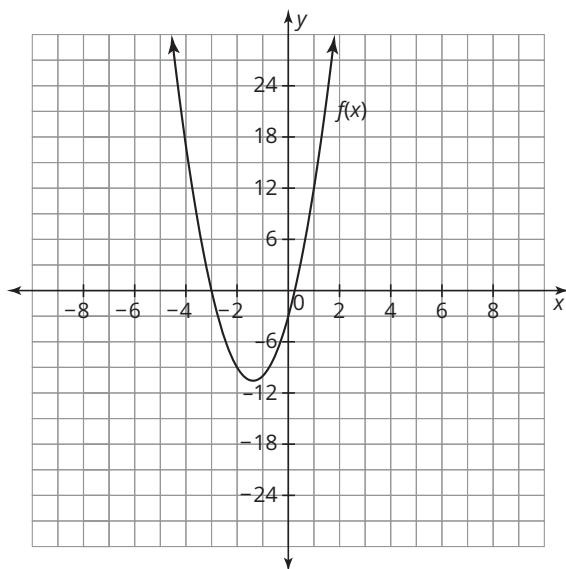
Stretch

- Consider the graph of $f(x)$.
 - Determine the end behavior of $f(x)$.
 - Determine the x -intercepts.
 - Determine the domain and range of $f(x)$.
 - If the domain is restricted to $-3 < x < 2$, what are the maximum and minimum values of the function?



Review

- Determine algebraically whether each function is even, odd, or neither.
 - $f(x) = x^5 - 2x^3 + x$
 - $f(x) = 3x^6 - 5x^4 - 1$
- Dilate each function by the given factor to create a new function of higher degree. Sketch the graph and then identify the zeros of the new function.
 - $f(x) = (x + 3)(4x - 1)$
Dilate by $(x - 1)$.
 - $f(x) = (x + 2)(x - 2)$
Dilate by x .



- Rewrite each expression using multiplication.
 - $(3 - 2i)(4 + 5i)$
 - $(7 - 6i)^2$