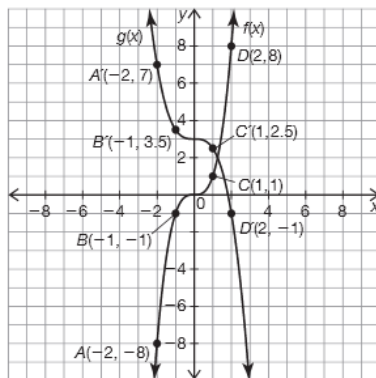


LESSON 3.3 Assignment

Name _____ Date _____

Function Makeover
Transformations and Symmetry of Polynomial Functions

1. Analyze the graphs of the functions $f(x)$ and $g(x)$.



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- 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 resulted in the function $g(x)$. Explain your reasoning.

- c. Write the equation for $g(x)$.

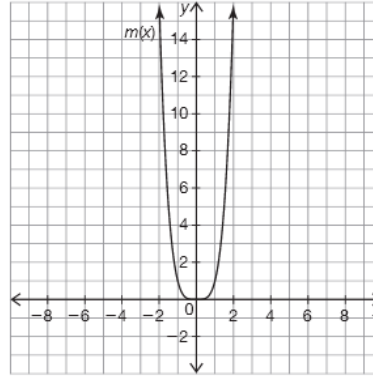
- d. Is the function $g(x)$ even, odd, or neither? Explain your reasoning.

LESSON 3.3 Assignment

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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)	→	
$(-2, 16)$	→	
$(-1, 1)$	→	
$(0, 0)$	→	
$(1, 1)$	→	
$(2, 16)$	→	



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- 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.
3. Consider the polynomial function $p(x) = ax^3 + bx^2 + cx + d$, where $a, b, c,$ and d are real numbers and $a \neq 0$.
- a. Determine the number of possible zeros for $p(x)$.
- b. Determine the number of possible x -intercepts for the graph of $p(x)$.
- c. Determine the number of possible maximums and minimums for the graph of $p(x)$.
- d. Describe the end behavior of the graph of $p(x)$.

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