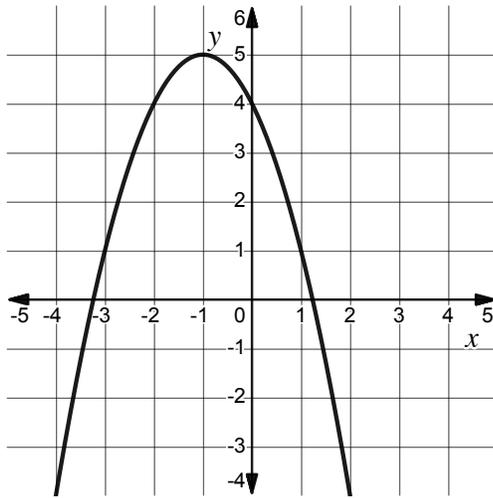


HW L2.3

NAME _____

1. The graph of $y = g(x)$ is shown below. Is g even, odd, or neither? Give a reason for your answer.



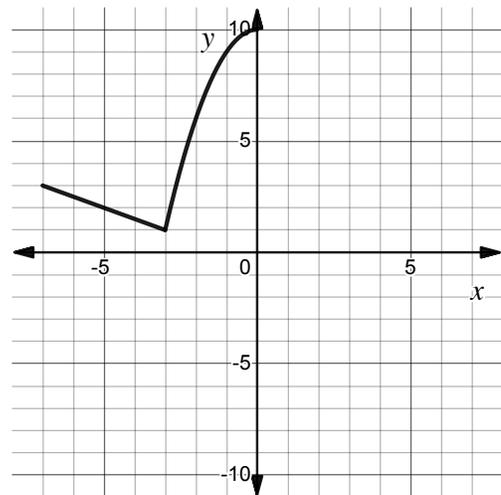
2. A table of selected values is given for a function h . If h is an odd function, give three other ordered pairs on the graph of h .

x	$h(x)$
-5	10
3	-4
11	8
-9	-1
4	0

3. Let $g(x) = 3x^2 - 7$. Is g even, odd, or neither? Give a reason for your answer.

4. Let $f(x) = x^3 + 5x^2 + 11$. Is f even, odd, or neither? Prove your answer algebraically.

5. Half of the graph of an even function is shown. Sketch the other half of the function on the same xy -coordinate grid.



6. Determine if the statement is true or false. If true, explain why. If false, give a counterexample.
- All quadratic functions are even.
 - Reflecting an even or odd function across the x -axis does not affect the symmetry of the function.

7. Benedict was asked to determine if the function $f(x) = x^3 - 4x^2 - 4x + 19$ was even, odd, or neither. His work is shown below:

$$f(2) = 2^3 - 4(2^2) - 4(2) + 19 = 3$$

$$f(-2) = (-2)^3 - 4(-2)^2 - 4(-2) + 19 = 3$$

Since $f(2) = f(-2)$, $f(x)$ is even.

Imagine you were Benedict's teacher. What feedback would you give him?

-  8. Let $f(x) = 2x^m + 5x^n + k$ for some nonnegative integers k , m , and n .
- Find values for m , n , and k , so that f is an even function or explain why this is not possible.
 - Find values for m , n , and k so that f is an odd function or explain why this is not possible.
 - Find values for m , n , and k so that f is neither even nor odd or explain why this is not possible.

-  9. Can you think of a function that is both even and odd? Explain.