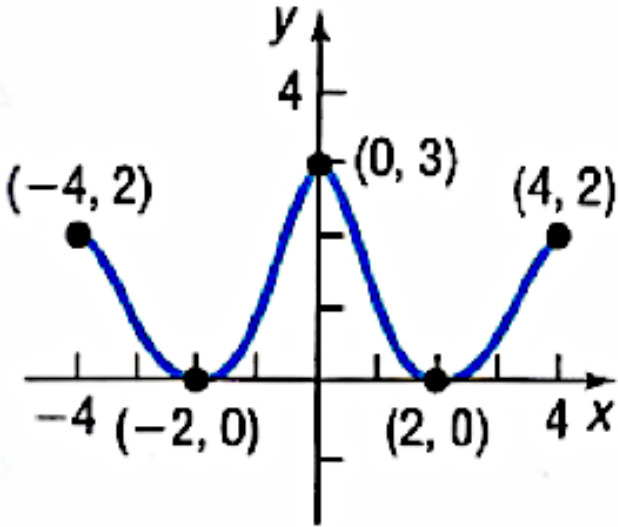


**Objective:** Determining whether a function is even, odd, both, or neither.

**Warm Up:** Analyze the key features of the following graph.



Maximums/Minimums:

Increasing:

Decreasing:

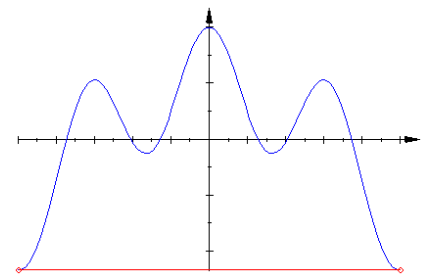
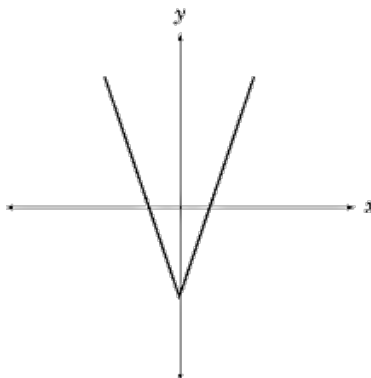
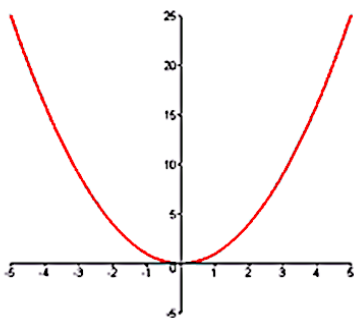
Intercepts:

Domain:

Range:

### Even Functions:

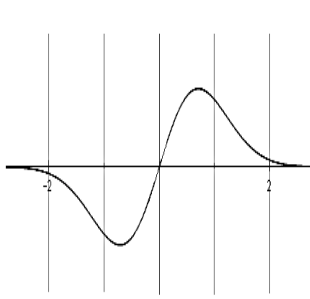
The following graphs are all **even** functions:



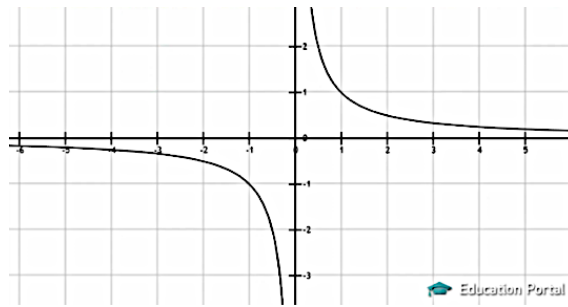
What do they all have in common?

## Odd Functions:

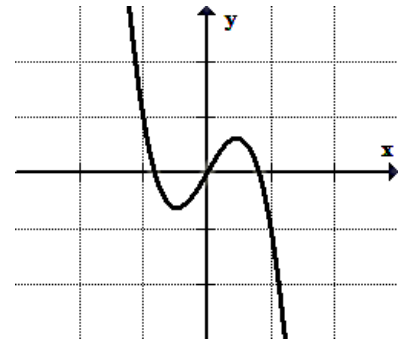
The following graphs are all **odd** functions:



[www.analyzemath.com](http://www.analyzemath.com)



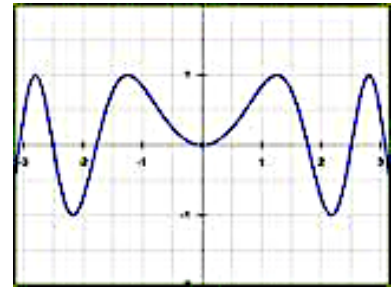
Education Portal



What do they all have in common?

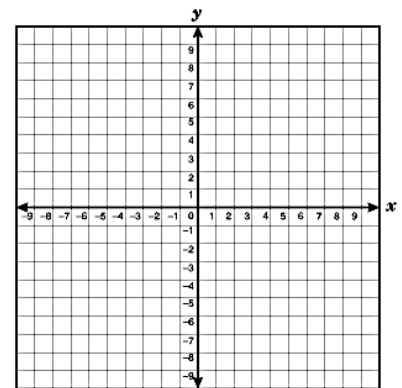
### Examples

1. Classify the function as even or odd, then draw in the line or point of symmetry.



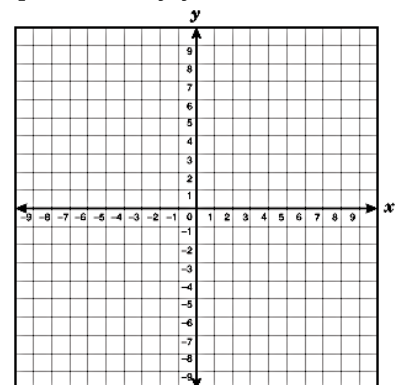
2. Given that the function below is odd, complete the table. Use the graph to verify your results.

$x$	$y$
-5	1
-3	2
-1	5
0	9
1	
3	
5	

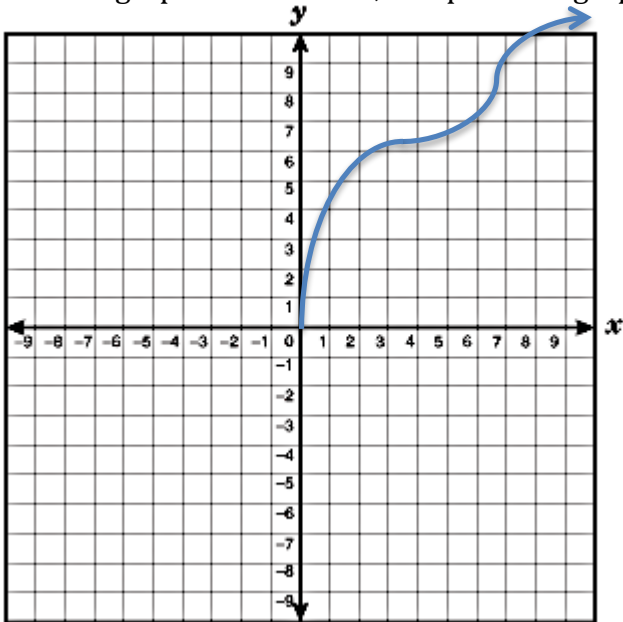


3. Given that the function below is even, complete the table. Use the graph to verify your results.

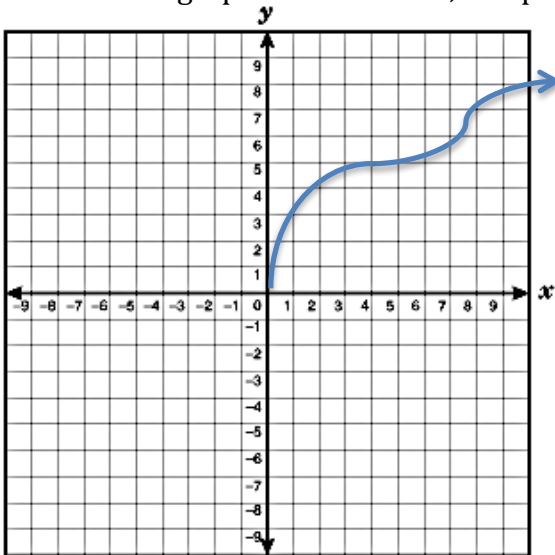
$x$	$y$
-5	1
-3	2
-1	5
0	9
1	
3	
5	



4. Given the graph below is odd, complete the graph.



5. Given the graph below is even, complete the graph.



Reflection:

1. What is the difference between an even and an odd function?
2. Is it possible for a function to be **both** even and odd?
3. Does the degree of the polynomial indicate whether a function is even or odd?