Name: _____ Date: _____ **Unit 6 Class Work**

# Even and Odd Polynomial Functions Class Work

**Objective:** *You will be able to identify & prove even and odd polynomial functions.*

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★ **Even functions:**

**- A function is considered even when**

***In other words, the graph of an even function is**

*- Prove that $x^2 - 4$ is even.*

★ **Odd functions:**

**- A function is considered odd when**

***In other words, the graph of an odd function is**

*- Prove that $x^3 - x$ is odd.*

★ **Note that some functions are neither odd nor even!**

*Practice!*

1. Identify each function as even, odd, or neither. Justify your answers completely.

a. $r(x) = (x + 1)^2$

b. $t(x) = x^3 + 2x$

c. $g(x) = x^5 - 3x^3 + 4x^2$

d. $m(x) = 3x^4 - 2x^2 - 1$

e. $n(x) = x^6 - 2x^2 - x$

e. $k(x) = 2x^9 - 3x$

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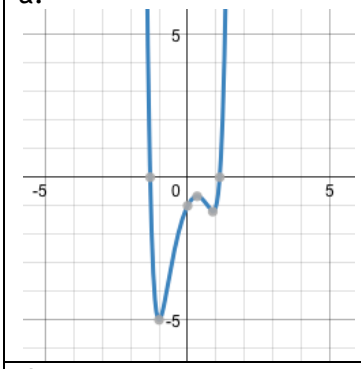
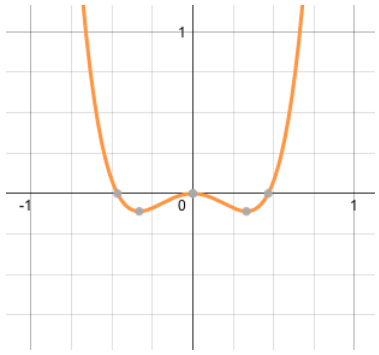
2. Identify each function as even, odd, or neither. Support your choice.

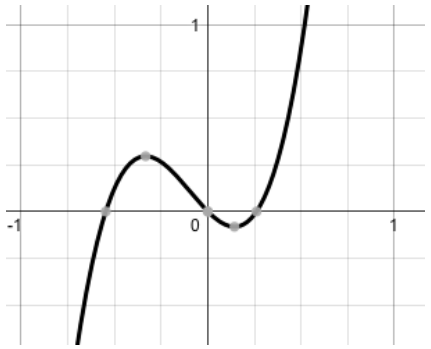
a.




b.




c.

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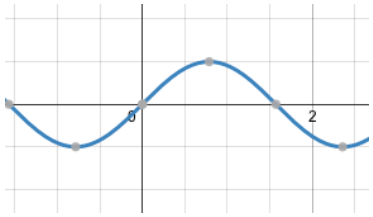
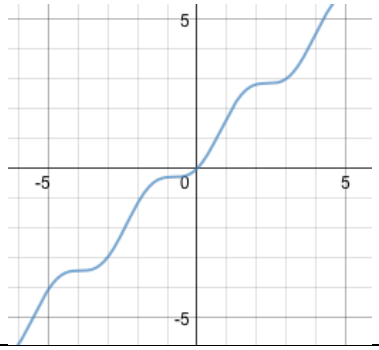
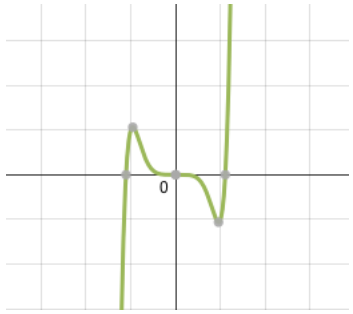



e.




f.




***Complete the following OUT OF ORDER***. ☺

★ **Create a function equation or a graph for an even function.**

★ **Create a function equation or a graph for an odd function.**

★ **Create a function equation or a graph for a function that is neither even nor odd.**

***Switch with a partner, and determine the evenness or oddness of their functions!**