E

Alg II Unit 2: Even, Odd, or Neither Worksheet

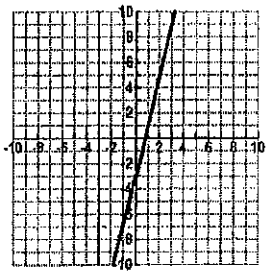
Some functions can be classified as **odd** functions. They have the characteristic that $f(-x) = -f(x)$. Graphically, you have a function that has 180° rotational symmetry around the origin. So, to determine if a function is odd, you can plug different values in for x to check and see if $f(-x) = -f(x)$ - as in, see if $f(-2) = -f(2)$ *and* $f(5) = -f(-5)$ and such. It shouldn't take too many calculations to determine what you need to know. If you have the graph, you just check for that 180° rotational symmetry around the origin.

Some functions can be classified as **even** functions. They have the characteristic that $f(-x) = f(x)$. Graphically, you have a function that has reflective symmetry over the y-axis. So, to determine if a function is even, you can plug different values in for x to check and see if $f(-x) = f(x)$ - as in, see if $f(-2) = f(2)$ *and* $f(5) = f(-5)$ and such. It shouldn't take too many calculations to determine what you need to know. If you have the graph, you just check for that reflective symmetry over the y-axis.

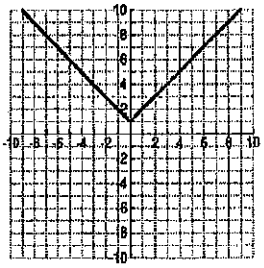
If neither characteristic is present, the function is considered **neither** odd nor even. Go figure.

Determine whether the following functions are even, odd, or neither.

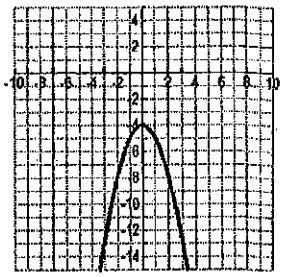
1. f(x)= 4x – 3



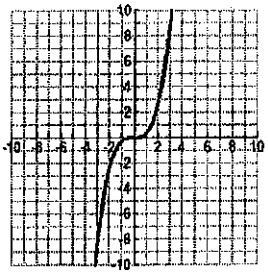
2. f(x)=$|x|$ +1



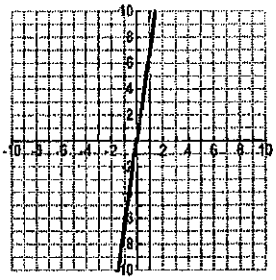
3. f(x)= $-x^2 - 4$



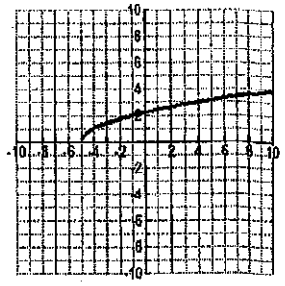
4. f(x)= $\frac{1}{3}x^3$



5. f(x)= 7x



6. f(x)= $\sqrt{x+5}$



Use the values of x = 2 and x = -5 to check to see if the following are odd, even or neither.

7. $f(x)= 3x^2$

8. $f(x) = x^3 - 2$

9. $f(x)= 3x + 4$

10. $f(x)= x^2 - 5$

11. $f(x)= 10x + 5$

12. $f(x)= 2(x+1)^3$

13. $f(x) = -4x$

14. $f(x) = |x|$

15. $2x^4$