

Name Schlansky
Mr. Schlansky

Date _____
Algebra II

Even and Odd Functions

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

1. $f(x) = x^2$

even

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

odd

3. $f(x) = x^4 + 3x^0$

even

4. $f(x) = x^3 + 1$

neither

5. $f(x) = x^7 + 2x^5 - 9x^4$

odd

6. $f(x) = -9x^6 - 6x^9$

neither

7. $f(x) = -6x^3 - 8x$

odd

8. $f(x) = 10x^2 + 8x^4 - 4x$

neither

9. $f(x) = -7x^8 + 7$

even

10. $f(x) = |x| + 4$

even

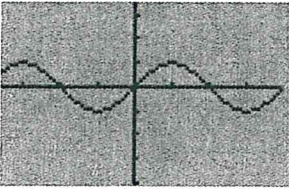
11. $f(x) = |x + 4|$

neither

12. $f(x) = \frac{10}{x}$

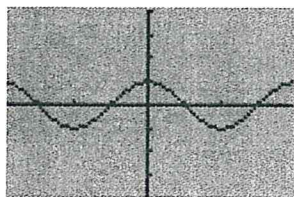
odd

13.



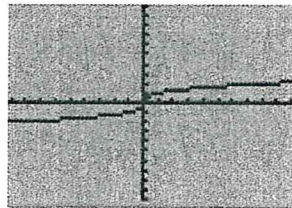
odd

14.



even

15.



odd

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

16. $f(x) = x^2$

$$f(-x) = (-x)^2 \quad -f(x) = -x^2$$

$$f(-x) = x^2$$

even, $f(x) = f(-x)$

17. $f(x) = x^3$

$$f(-x) = (-x)^3 \quad -f(x) = -x^3$$

$$f(-x) = -x^3$$

odd, $f(-x) = -f(x)$

18. $f(x) = x + 2$

$$f(-x) = -x + 2 \quad -f(x) = -(x + 2)$$

$$-f(x) = -x - 2$$

neither

19. $f(x) = x^2 + x$

$$f(-x) = (-x)^2 + (-x)$$

$$f(-x) = x^2 - x$$

$$-f(x) = -(x^2 + x)$$

$$-f(x) = -x^2 - x$$

20. $f(x) = x^4 + 2x^2 - 7$

$$f(-x) = (-x)^4 + 2(-x)^2 - 7$$

$$f(-x) = x^4 + 2x^2 - 7$$

even
 $f(x) = f(-x)$

22. $f(x) = x^6 + 4x^2 - 7x^{10} + 5$

$$f(-x) = (-x)^6 + 4(-x)^2 - 7(-x)^{10} + 5$$

$$f(-x) = x^6 + 4x^2 - 7x^{10} + 5$$

$$-f(x) = -(x^6 + 4x^2 - 7x^{10} + 5)$$

$$-f(x) = -x^6 - 4x^2 + 7x^{10} - 5$$

even

$$f(x) = f(-x)$$

21. $f(x) = x^7 + 2x^3 + 8x$

$$f(-x) = (-x)^7 + 2(-x)^3 + 8(-x)$$

$$f(-x) = -x^7 - 2x^3 - 8x$$

odd

$$f(-x) = -f(x)$$

23. $f(x) = 2x^7 + 3x^6 - 4x^5 + 5x^4$

$$f(-x) = 2(-x)^7 + 3(-x)^6 - 4(-x)^5 + 5(-x)^4$$

$$f(-x) = -2x^7 + 3x^6 + 4x^5 + 5x^4$$

$$-f(x) = -(2x^7 + 3x^6 - 4x^5 + 5x^4)$$

$$-f(x) = -2x^7 - 3x^6 + 4x^5 - 5x^4$$

neither