

# Chapter 3 Practice Test

Name \_\_\_\_\_

Period \_\_\_\_\_

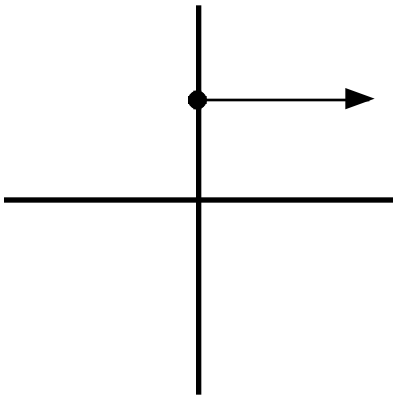
**Directions:** Determine whether each function is even, odd, or neither. Explain.

1.  $y = 3x^4 - 6x^2 + 2$

2.  $y = 10x^{12} - 7x^3 + 1$

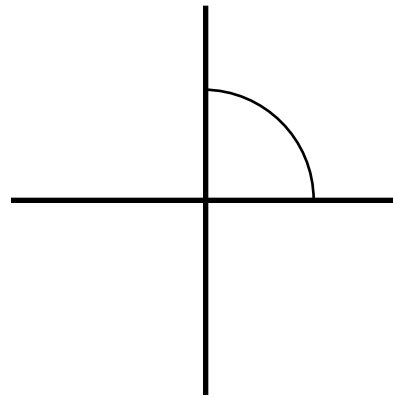
**Directions:** The graphs below are portions of completed graphs. Sketch a completed graph showing the symmetry requested.

3.



symmetry about the x-axis

4.



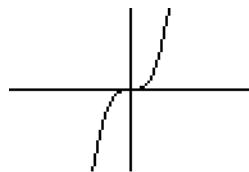
symmetry about the origin

**Directions:** State whether each of the following functions is even, odd, or neither. Explain.

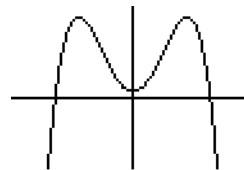
5.



6.



7.



8.



**Directions:** Solve the following problems. Show your work.

9. Where does the graph of  $y = \frac{x - 17}{x^2 - 6x + 4}$  touch the x-axis?

10. What is the horizontal asymptote of  $y = \frac{-2x^2 - 5x + 4}{3x^{12} - 14x}$ ?

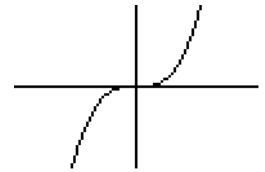
**Directions:** Find the inverse of each function below.

f(x)	
x	y
2	5
14	8
23	3

11.

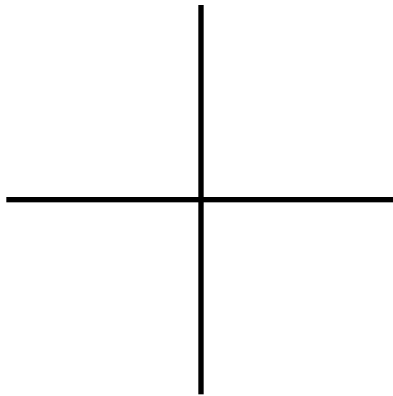
12.  $y = \frac{x}{x - 3}$

13.



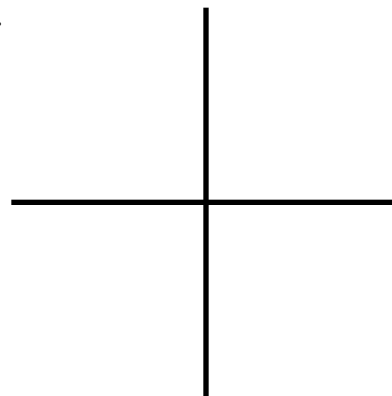
**Directions:** Consider  $y = f(x)$  shown at the right. On the grids provided, sketch the shift requested.

14.

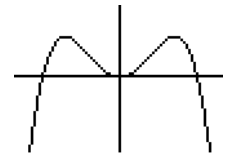


$y = -f(x)$

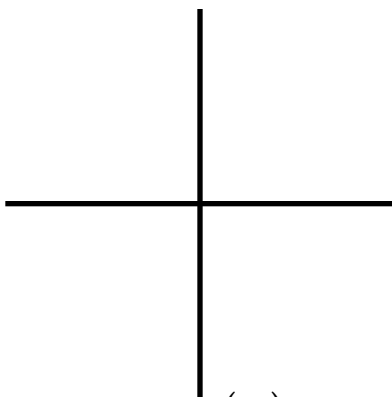
15.



$y = |f(x)|$

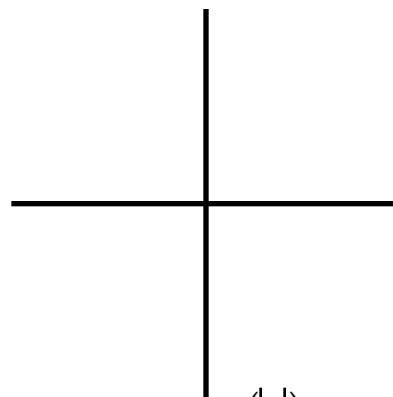


16.

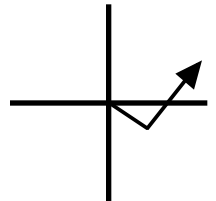


$y = w(-x)$

17.



$y = w(|x|)$



18. Find the inverse of  $y = (x - 2)^3 + 4$ .

**Directions:** On a separate sheet of graph paper sketch each function. Make sure you number and label each graph. Plot at least 2 points for accuracy.

19.  $y \geq -4x + 2$

20.  $y < 3|x + 2| - 1$

21.  $y = x^3 + 2$

22.  $y = -(x + 1)^2 + 6$

23.  $y = \frac{3x - 2}{x - 1}$

24.  $y = \frac{x^2 - 25}{x - 5}$

25.  $y = \left| \frac{-3}{x^2 - 8x + 16} \right|$

26.  $y = -|x^2 - 4|$

27. Let  $f(x) = \begin{cases} \frac{1}{x} & \text{if } x < 0 \\ 3 & \text{if } 0 < x < 4 \\ \sqrt{x - 4} & \text{if } x \geq 4 \end{cases}$

Graph  $f(x)$ ,  $-f(x)$ ,  $f(-x)$ ,  $|f(x)|$ , and  $f(|x|)$ .