Name \_\_\_\_\_ Mr. Schlansky Date \_\_\_\_\_Algebra II

## **Transforming Functions**



- 2. The graph below represents f(x).
  Match the following equations with their graphs:
  a) f(x+2)
  b) f(x)+2
- c) f(x-2)
- d) f(x) 2









3. Which transformation of y = 2<sup>x</sup> results in the function y = 2<sup>x</sup> - 2?
1) Up two units
2) Down two units
4) Left 2 Units

4. Which transformation of  $y = 2^x$  results in the function  $y = 2^{x-2}$ 1) Up two units3) Right two units2) Down two units4) Left 2 Units

5. The function  $f(x) = \sqrt{x}$ . Which function represents a shift of the graph left 3 units? 1)  $f(x-3) = \sqrt{x-3}$ 2)  $f(x+3) = \sqrt{x+3}$ 3)  $f(x) + 3 = \sqrt{x} + 3$ 4)  $f(x) - 3 = \sqrt{x} - 3$ 

6. Joey's math class is studying the basic quadratic function,  $f(x) = x^2$ . Each student is supposed to make two new functions by adding or subtracting a constant to the function. Joey chooses the functions  $g(x) = x^2 - 5$  and  $h(x) = x^2 + 2$ . What transformations would map f(x) to g(x) and f(x) to h(x)? 1) shift left 5, shift right 2 2) shift right 5, shift left 2 3) shift up 5, shift down 2 4) shift down 5, shift up 2

7. If g(x) = f(x) + 2, how is the graph of f(x) translated to form the graph of g(x)?

8. If h(x) = f(x-4), how is the graph of f(x) translated to form the graph of g(x)?

9. How is the parent function transformed to create f(x) = |x+3| - 2?

10. How is the parent function transformed to create  $f(x) = (x-4)^2 + 3$ ?

11. The graph to the right represents f(x). Match the following with their graphs:

- a) Which graph represents f(-x)
- b) Which graph represents -f(x)







12. The graph to the right represents g(x). Match the following with their graphs:

- a) Which graph represents g(-x)
- b) Which graph represents -g(x)







13. The accompanying graph represents the equation y = f(x).

Which graph represents g(x), if g(x) = -f(x)?





14. The graph below represents f(x).





Which graph best represents f(-x)?

15. Consider the function y = h(x), defined by the graph to the right. Which equation could be used to represent the graph shown below?







