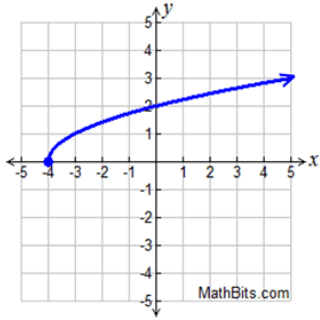


Name: _____ Hour: _____

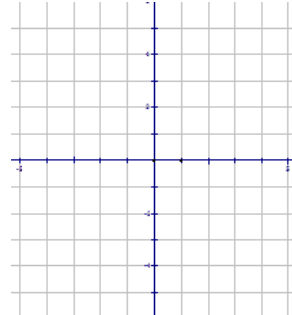
Sec. 4.2

Transformations in Function Notation

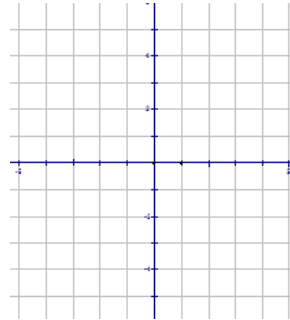
Let $f(x)$ be the function represented by the graph below. Perform each indicated transformation and graph the new function on the graph provided.



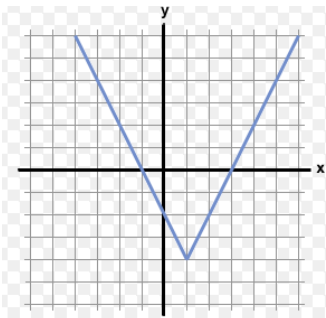
1. $g(x) = f(x) + 2$



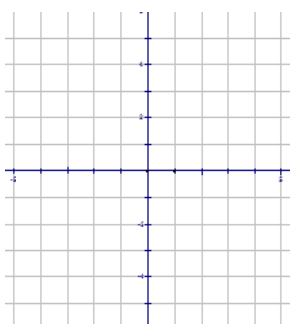
2. $h(x) = -f(x)$



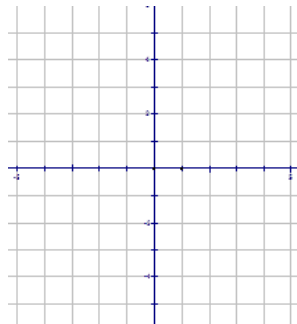
Let $f(x)$ be the function represented by the graph below. Perform each indicated transformation and graph the new function on the graph provided



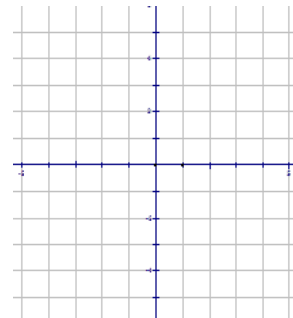
3. $k(x) = f(x - 3)$



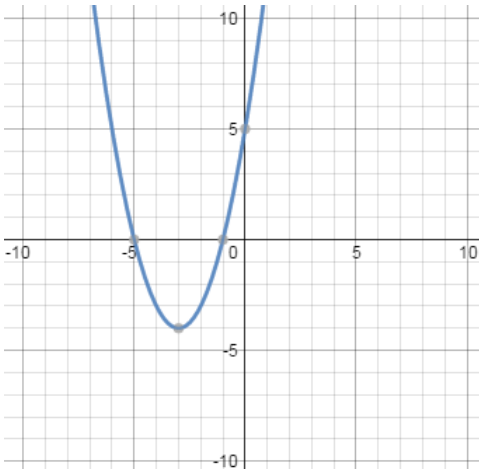
4. $m(x) = 2f(x)$



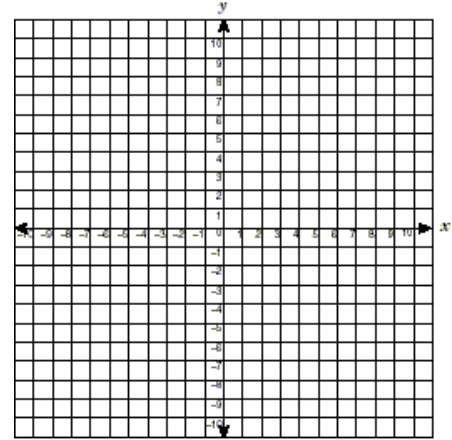
5. $j(x) = -f(x + 1)$



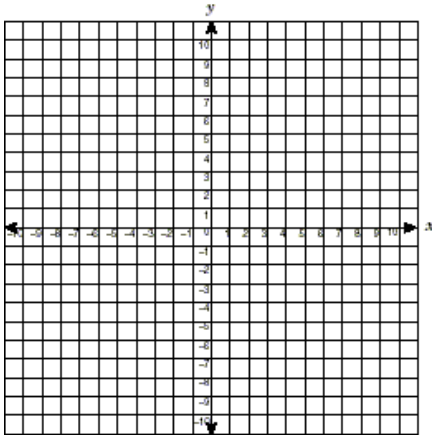
Let $f(x)$ be the function represented by the graph below. Perform each indicated transformation and graph the new function on the graph provided.



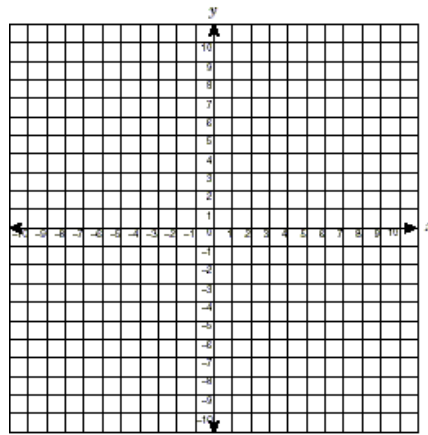
6. $g(x) = f(x) - 1$



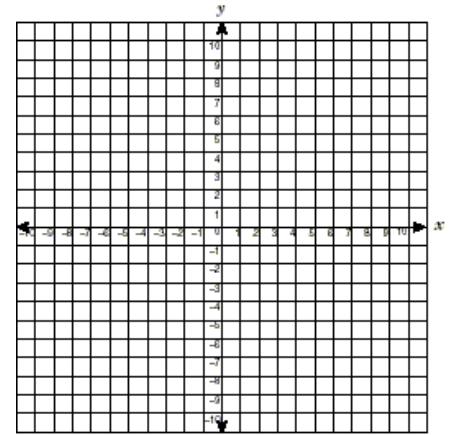
7. $h(x) = -f(x)$



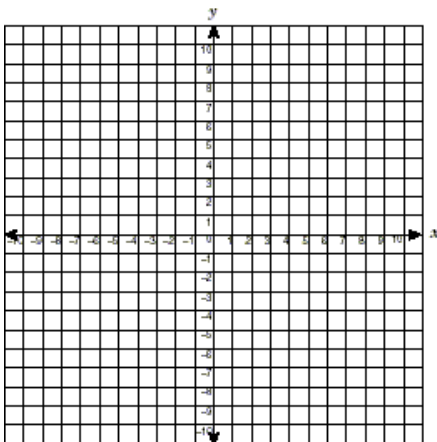
8. $k(x) = f(x + 2)$



9. $m(x) = 3f(x)$



10. $j(x) = \frac{1}{2}f(x) + 2$



Using the functions above evaluate them for the given values.

11. Find $h(-1)$

12. Find $k(-5)$

13. Find $m(0)$

14. Using full sentences, explain the process of transforming $f(x)$ to $g(x)$ if $g(x) = -3f(x - 2) + 1$.

Write the function with the indicated transformations. Use the given parent function (\sqrt{x} , x^2 , $|x|$).

15. A quadratic function: Reflection across the x-axis, horizontal shift right 3, vertical shift down 4

16. A square root function: Reflection across the y-axis, horizontal shift left 2

17. An absolute value function: Vertical compression by a factor of $\frac{1}{2}$, vertical shift down 6

18. A square root function: Horizontal shift left 7, vertical shift up 3

19. A quadratic function: Vertical stretch by a factor of 2, reflection across the y-axis, vertical shift down 5

20. An absolute value function: Reflection across the x-axis, horizontal shift left 3, vertical shift up 8

21. A quadratic function: Vertical compression by a factor of $\frac{1}{5}$, reflection across the x-axis, vertical shift up 2

22. A square root function: Reflection across the y-axis, vertical stretch by a factor of 4, horizontal shift right 5, vertical shift down 3