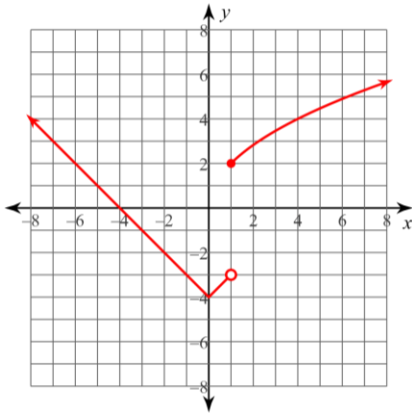


Identify the domain, range, and end behavior of each function.

1.

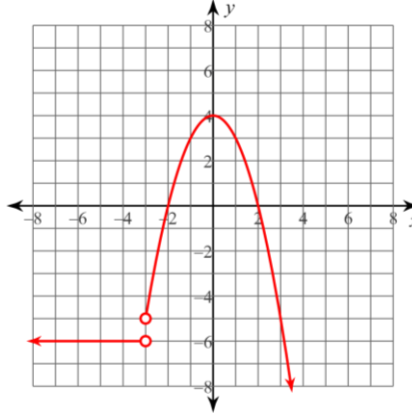


Domain:

Range:

$\lim_{x \rightarrow -\infty} f(x) =$ $\lim_{x \rightarrow \infty} f(x) =$

2.

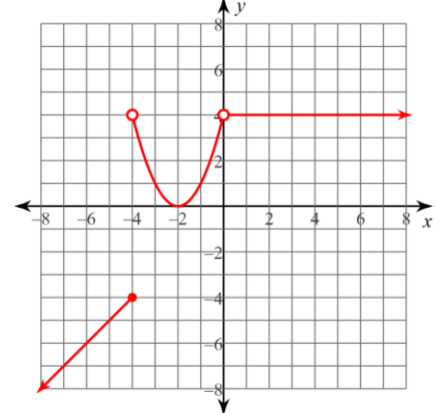


Domain:

Range:

$\lim_{x \rightarrow -\infty} f(x) =$ $\lim_{x \rightarrow \infty} f(x) =$

3.



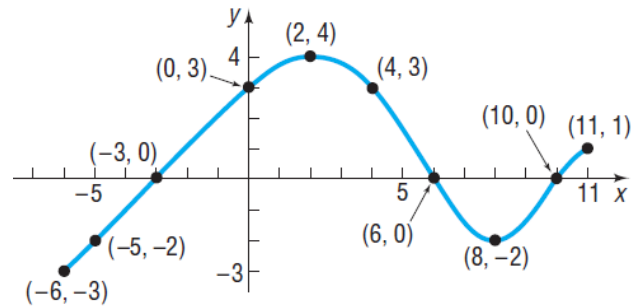
Domain:

Range:

$\lim_{x \rightarrow -\infty} f(x) =$ $\lim_{x \rightarrow \infty} f(x) =$

4. What is the domain of f ?
5. What is the range of f ?
6. What are the x -intercepts?
7. What is the y -intercept?
8. For what values of x does $f(x) = 3$?
9. Identify the local maximum: _____; location: $x =$ _____
10. Identify the local minimum: _____; location: $x =$ _____
11. Identify the increasing interval(s):
12. Identify the decreasing interval(s):

Use with problems 4 – 12.



The point $(3, -4)$ is on the graph of the function $f(x)$. Find the corresponding point on the graph obtained by the given transformations.

13. $y = 15f(x + 2) - 5$

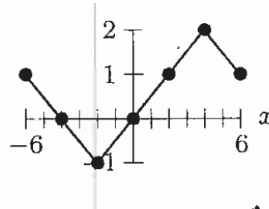
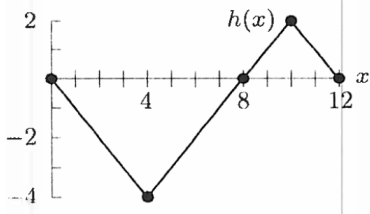
14. $y = -\frac{1}{4}f(x - 5)$

15. $y = -2(-x) + 4$

16. The domain D and range R of function f are given. Identify the domain and range of g .

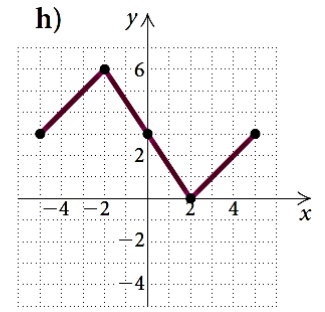
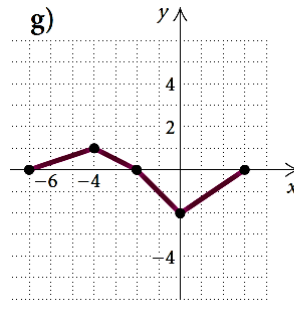
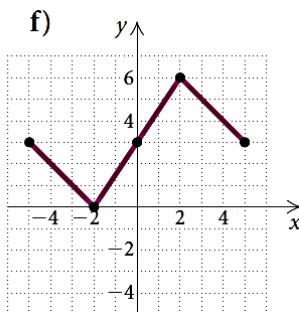
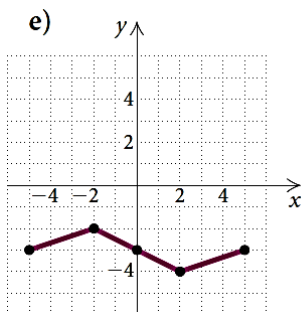
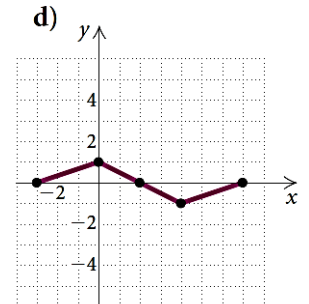
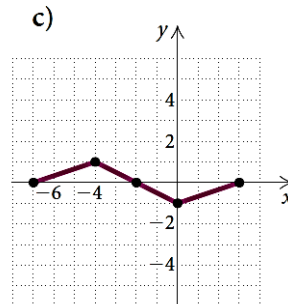
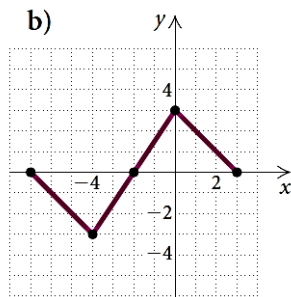
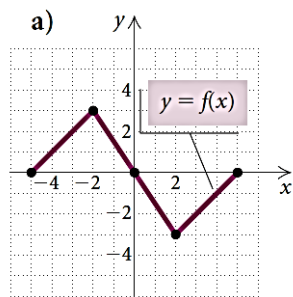
$D = [-9, 5], R = [4, 8]; g(x) = \frac{3}{4}f(x - 1) - 3$

17. Describe the transformation(s) that have been applied to the graph of $h(x)$ to create the graph on the right. Then write a formula in terms of $h(x)$.



The graph of the parent function $y = f(x)$ is shown in figure a. Match the function $g(x)$ with one of the graphs b – h, which follow. Some graphs may be used more than once and some may not be used at all.

18. $g(x) = f(-x) + 3$ 19. $g(x) = f(x) + 3$ 20. $g(x) = -f(x) + 3$ 21. $g(x) = -f(x + 2)$
 22. $g(x) = -\frac{1}{3}f(-x) + 3$ 23. $g(x) = \frac{1}{3}f(x + 2)$ 24. $g(x) = \frac{1}{3}f(x) - 3$ 25. $g(x) = \frac{1}{3}f(x - 2)$



Describe the transformation(s) that have been applied to the graph of $f(x)$ – which is solid – to create the graph of $g(x)$ – which is dashed. Then write a formula for $g(x)$ in terms of $f(x)$.

