

Basics of Functions and Their Graphs

1. Determine whether each relation is a function.
(Similar to p.210 #2)

$$\{(3,5), (4,7), (9,9)\}$$

2. Determine whether each relation is a function.
(Similar to p.210 #4)

$$\{(5,3), (5,4), (6,3), (6,4)\}$$

3. Determine whether each relation is a function.
(Similar to p.210 #10)

$$\{(2,1), (3,1), (4,1)\}$$

4. Determine whether each equation defines y as a function of x :
(Similar to p.210 #12-26)

$$x + 3y = 4$$

5. Determine whether each equation defines y as a function of x :
(Similar to p.210 #12-26)

$$x^2 + 5y = 3$$

6. Determine whether each equation defines y as a function of x :
(Similar to p.210 #12-26)

$$x^2 + y^2 = 16$$

7. Determine whether each equation defines y as a function of x :
(Similar to p.210 #12-26)

$$5x = y^2$$

8. Determine whether each equation defines y as a function of x :
(Similar to p.210 #12-26)

$$y = -\sqrt{x-2}$$

9. Determine whether each equation defines y as a function of x :
(Similar to p.210 #12-26)

$$5x + y^3 = 2$$

10. Determine whether each equation defines y as a function of x :
(Similar to p.210 #12-26)

$$xy - 3y = 2$$

11. Determine whether each equation defines y as a function of x :
(Similar to p.210 #12-26)

$$|x| + y = 3$$

12. Evaluate each function at the given values of the independent variable and simplify:

(Similar to p.210 #30)

$$g(x) = x^2 - 5x - 2$$

a) $g(-3)$ b) $g(x+4)$ c) $g(-x)$

13. Evaluate each function at the given values of the independent variable and simplify:

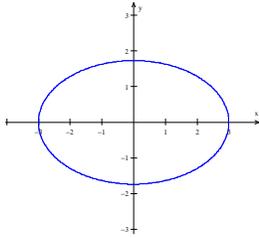
(Similar to p.211 #37c)

$$f(x) = \frac{x}{|x|}$$

$$f(r^2)$$

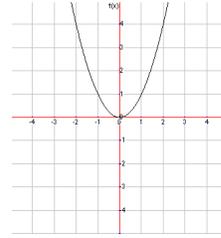
14. Use the vertical line test to identify graphs in which y is a function of x:

(Similar to p.211 #56-64)



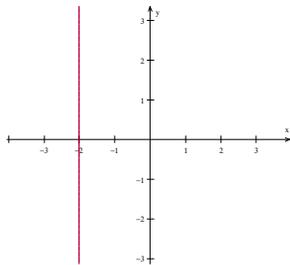
15. Use the vertical line test to identify graphs in which y is a function of x:

(Similar to p.211 #56-64)



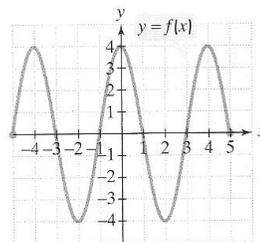
16. Use the vertical line test to identify graphs in which y is a function of x:

(Similar to p.211 #56-64)



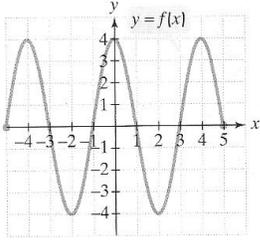
17. Use the graph of f to find each indicated function value:

(Similar to p.211 #66-76)



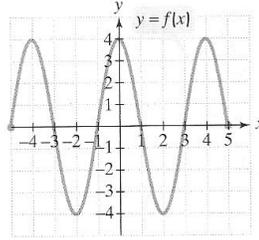
$f(0)$

18. Use the graph of f to find each indicated function value:
(Similar to p.211 #66-76)



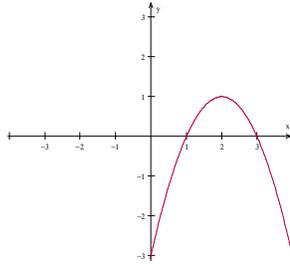
$f(1)$

19. Use the graph of f to find each indicated function value:
(Similar to p.211 #66-76)



$f(2)$

20. Use the graph to determine a. the function's domain, b. the function's range, c. the x-intercepts, d. the y-intercept, if any
(Similar to p.212 #78)



21. Use the graph to determine a. the function's domain, b. the function's range, c. the x-intercepts, d. the y-intercept, if any
(Similar to p.212 #82)

