

Name: _____ Date: _____

1. State whether the following relation is a function.
 $\{(1, 3), (2, 6), (3, 10), (1, -4), (2, -8)\}$
2. State whether the following relation is a function.
 $\{(4, 3), (7, 6), (9, 10), (4, -4), (7, -8)\}$
3. State whether the following relation is a function.
 $\{(-7, 6), (-3, 6), (-2, 6), (2, 6), (6, 6)\}$
4. State whether the following relation is a function.
 $\{(6, 1), (7, 5), (11, 9), (6, -1), (7, -4)\}$
5. State whether the following relation is a function.
 $\{(-8, 5), (-5, 5), (-1, 5), (0, 5), (1, 5)\}$
6. State whether the following relation is a function.
 $\{(3, 2), (7, 3), (10, 4), (3, -1), (7, -5)\}$
7. State whether the following relation is a function.
 $\{(-4, 3), (-1, 3), (1, 3), (4, 3), (8, 3)\}$
8. Find the domain and range of the following function.
 $\{(3, 3), (6, 6), (-1, 6), (7, 7), (-3, 7)\}$
9. Find the range of the function defined by the equation and the given domain.
 $f(x) = 4 - 8x - x^2; D = \{-6, 0, 6\}$
10. Find the range of the function defined by the equation and the given domain.
 $f(x) = 4 - 7x - x^2; D = \{-5, 0, 5\}$
11. Find the domain and range of the following function.
 $\{(0, 0), (4, 4), (-1, 4), (7, 7), (-5, 7)\}$

12. Find the range of the function defined by the equation and the given domain.

$$f(x) = 7 - 6x - x^2; D = \{-3, 0, 3\}$$

13. Find the range of the function defined by the equation and the given domain.

$$f(x) = 4 - 8x - x^2; D = \{-5, 0, 5\}$$

14. Find the range of the function defined by the equation and the given domain.

$$f(x) = 4 - 8x - x^2; D = \{-2, 0, 2\}$$

15. Find the range of the function defined by the equation and the given domain.

$$f(x) = 4 - 7x - x^2; D = \{-4, 0, 4\}$$

16. Given the function $f(x) = 2x - 3$, find $f(3)$.

17. Given the function $s(t) = \frac{8}{5t-2}$, find $s(-3)$.

18. Given the function $f(x) = 4x^3 - 1$, find $f(3)$.

19. Given the function $s(t) = \frac{7}{5t-4}$, find $s(-3)$.

20. Given the function $f(x) = 5x^2 - 4x - 2$, find $f(5)$.

21. Given the function $f(x) = 5x - 1$, find $f(-3)$.

22. Given the function $s(t) = \frac{9}{5t-4}$, find $s(-3)$.

23. Given the function $f(x) = 3x^4 - 5x - 4$, find $f(2)$.

24. Given the function $f(x) = 2x^3 - 5x - 2$, find $f(-4)$.

25. Evaluate the transcript cost function $f(x) = 6 + 3(x-1)$ for the specified input.
 $f(q+r)$

26. Evaluate the transcript cost function $f(x) = 8 + 5(x-1)$ for the specified input.
 $f(u-v)$

27. Evaluate the parabolic function $f(x) = x^2 + x - 1$ for the specified input.
 $f(q-r)$

28. Evaluate the transcript cost function $f(x) = 9 + 7(x-1)$ for the specified input.
 $f(t+u)$

29. Evaluate the transcript cost function $f(x) = 4 + 2(x-1)$ for the specified input.
 $f(t-u)$

30. Evaluate the parabolic function $f(x) = x^2 + x + 4$ for the specified input.
 $f(s-t)$

31. Evaluate the parabolic function $f(x) = x^2 + x + 1$ for the specified input.
 $f(s+t)$

32. Evaluate the parabolic function $f(x) = x^2 + x - 5$ for the specified input.
 $f(p+q)$

Answer Key

1. Not a function
2. Not a function
3. Function
4. Not a function
5. Function
6. Not a function
7. Function
8. D: $\{-3, -1, 3, 6, 7\}$; R: $\{3, 6, 7\}$
9. $\{16, 4, -80\}$
10. $\{14, 4, -56\}$
11. D: $\{-5, -1, 0, 4, 7\}$; R: $\{0, 4, 7\}$
12. $\{16, 7, -20\}$
13. $\{19, 4, -61\}$
14. $\{16, 4, -16\}$
15. $\{16, 4, -40\}$
16. 3
17. $-\frac{8}{17}$
18. 107
19. $-\frac{7}{19}$
20. 103
21. -16
22. $-\frac{9}{19}$
23. 34
24. -110
25. $3q + 3r + 3$
26. $5u - 5v + 3$
27. $q^2 - 2qr + r^2 + q - r - 1$
28. $7t + 7u + 2$
29. $2t - 2u + 2$
30. $s^2 - 2st + t^2 + s - t + 4$
31. $s^2 + 2st + t^2 + s + t + 1$
32. $p^2 + 2pq + q^2 + p + q - 5$