

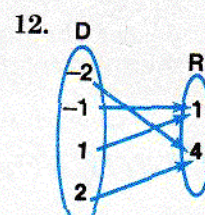
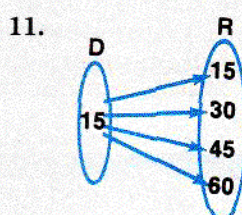
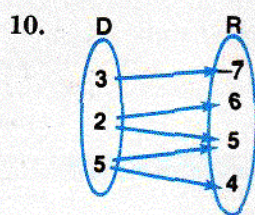
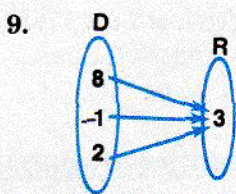
Copy the problems, except for the graphs, and show all work on a separate sheet of paper.

Exercises Part A:

State the domain and range of each relation. Then state if the relation is a function.

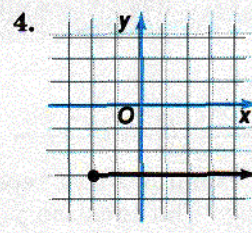
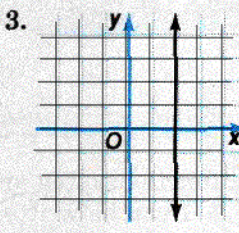
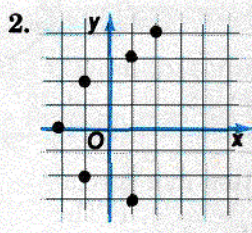
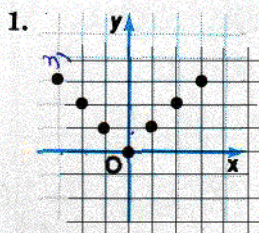
1. $\{(4, 4), (1, 1), (3, 3)\}$
2. $\{(6, 4)\}$
3. $\{(4, 3), (8, -2), (-17, 4), (-17, 8)\}$
4. $\{(1, 5), (5, 1)\}$
5. $\{(-3, -3), (-2, -2), (2, 2), (4, 4)\}$
6. $\{(-3, 3), (-2, 2), (2, -2), (4, -4)\}$
7. $\{(5, -3), (-3, 5)\}$
8. $\{(-3, 3), (-2, 3), (2, 3), (4, 3)\}$

State the relation shown by each of the following mappings. Then state if the relation is a function.

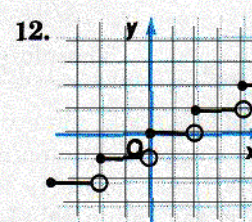
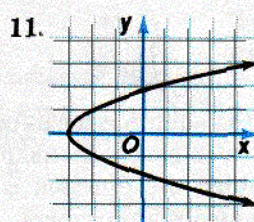
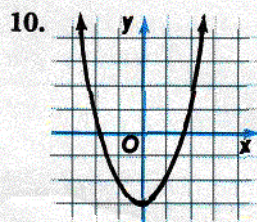
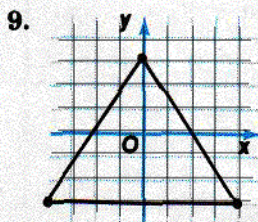
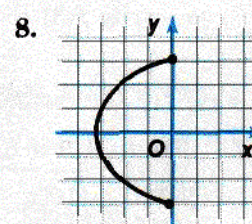
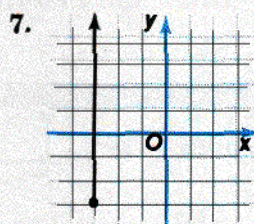
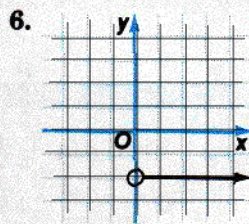
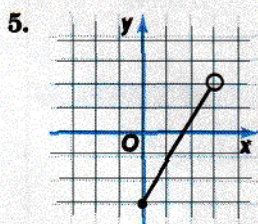


Exercises Part B:

State a relation shown by the graph. Then state the domain and range of the relation.



Use the vertical line test to determine if each relation is a function. Write *yes* or *no*.



Given $f(x) = \frac{7}{x-2}$, find each value

- | | | | | | |
|----------------------|----------------------|-------------|--------------|-------------|--------------|
| 13. $f(12)$ | 14. $f(3)$ | 15. $f(-1)$ | 16. $f(5.5)$ | 17. $f(0)$ | 18. $f(1.3)$ |
| 19. $f(\frac{1}{2})$ | 20. $f(\frac{2}{3})$ | 21. $f(a)$ | 22. $f(u+2)$ | 23. $f(3a)$ | 24. $f(2)$ |

Given $g(x) = 4x^3 + 2x^2 + x - 7$, find each value.

- | | | | | | |
|------------|-------------|-----------------------|----------------------|------------|-------------|
| 25. $g(1)$ | 26. $g(-4)$ | 27. $g(-\frac{1}{2})$ | 28. $g(\frac{1}{2})$ | 29. $g(t)$ | 30. $g(2s)$ |
|------------|-------------|-----------------------|----------------------|------------|-------------|

Given $h(x) = \frac{x^2 + 5x - 6}{x + 3}$, find each value.

- | | | | | | |
|------------|-------------|----------------------|----------------------|--------------|---------------|
| 31. $h(6)$ | 32. $h(-4)$ | 33. $h(\frac{1}{3})$ | 34. $h(\frac{1}{2})$ | 35. $h(a+1)$ | 36. $h(2m+3)$ |
|------------|-------------|----------------------|----------------------|--------------|---------------|

State the domain of each relation.

Sample: $f(x) = \frac{14}{x+4}$

The relation is undefined when the denominator is 0.

$$x + 4 = 0 \text{ or } x = -4$$

Thus, the domain is all real numbers except - 4.

37. $f(x) = \frac{3}{x-5}$

38. $f(x) = \frac{8}{|2x-7|}$

39. $g(x) = \frac{3}{x^2}$

40. $g(x) = \frac{2x+3}{2x-1}$

41. $x = |y|$

42. $y = |x| - 1$

43. $x = |-y|$

44. $x = -|y+4|$

Algebra Two with Trigonometry, Foster, Rath, Winters. Merrill Publishing Co. 1986. Pages 43 - 47.