General Algebra II   Review   Unit 6   page 1   _____

Given relation A = { (-3 , 4) , (-1 , 4) , (0 , 5) , (2 , -1) }

1. Graph relation A.

Graph of A

2. Complete the mapping diagram for relation A.

A

Domain of A   Range of A
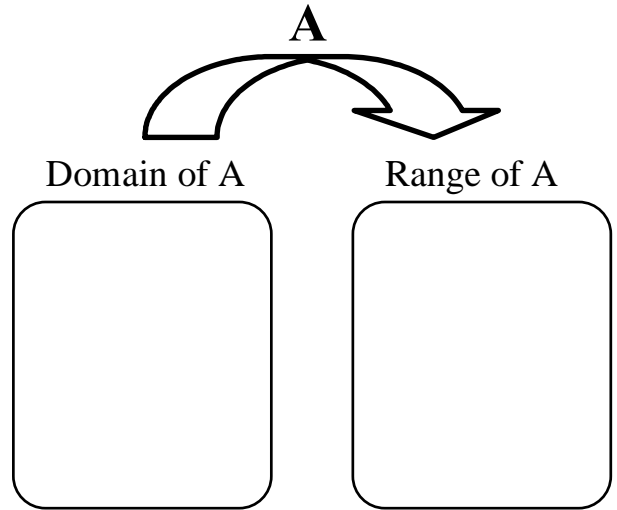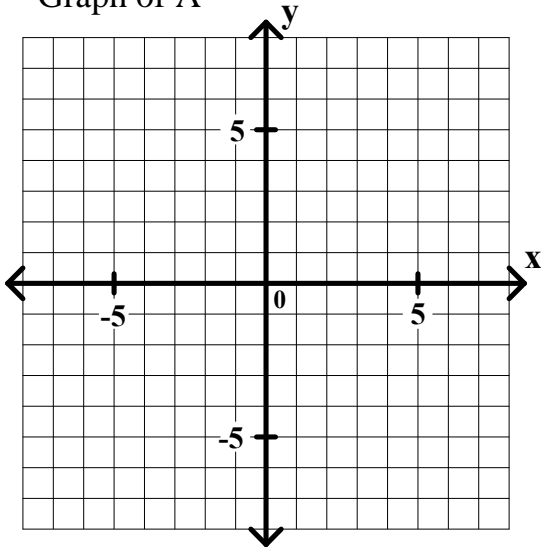
3. Is relation A a function? _____

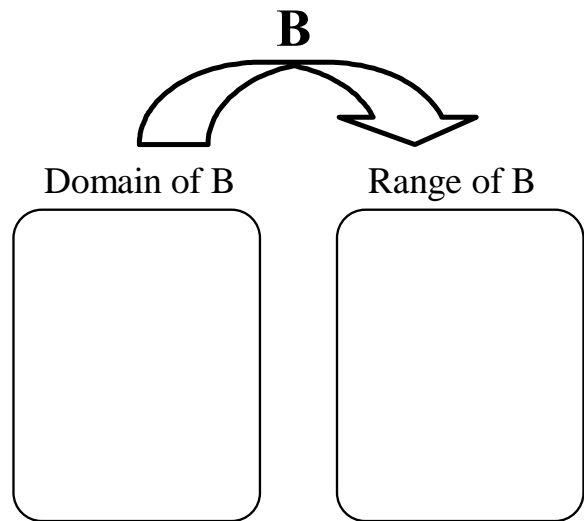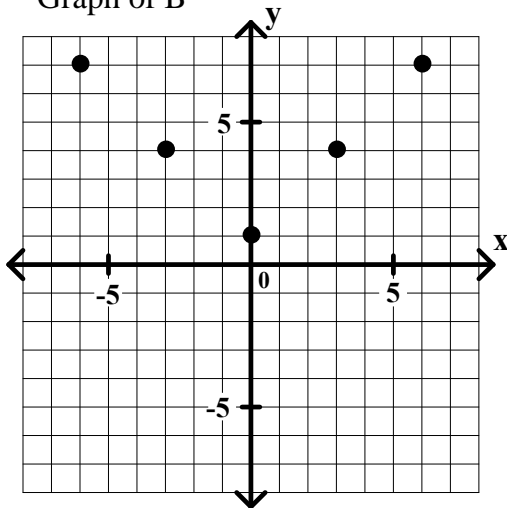
Given relation B graphed below.

4. Describe relation B using the listing method.

B = _____

5. Complete the mapping diagram for relation B.
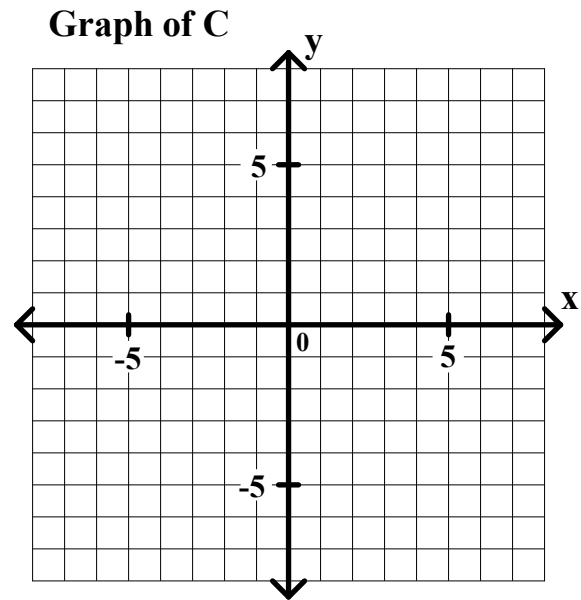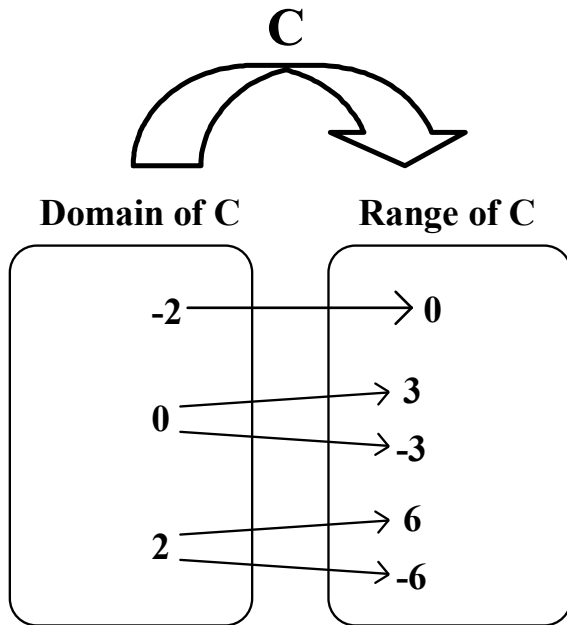
Graph of B

B

Domain of B   Range of B

6. Is relation B a function? _____

Given relaton C defined using a mapping diagram below.

7. Describe relation C using the listing method.

C = _____

8. Graph relation C.

C

Domain of C   **Range of C**

-2 ⟶ 0

0 ⟶ 3

⟶ -3

⟶ 6

2 ⟶ -6

Graph of C

9. Is relation C a function? _____

Given: Function G = { (x,y) : y = 2x – 3 } . Evaluate each of the following.

10.   G(3) = _____   **11.   G(0) = _____**   **12.   G(-4) = _____**

Given the function H defined by this graph.

Graph of H

13. What is the domain of H? _____

14. What is the range of H? _____

Evaluate each of the following.

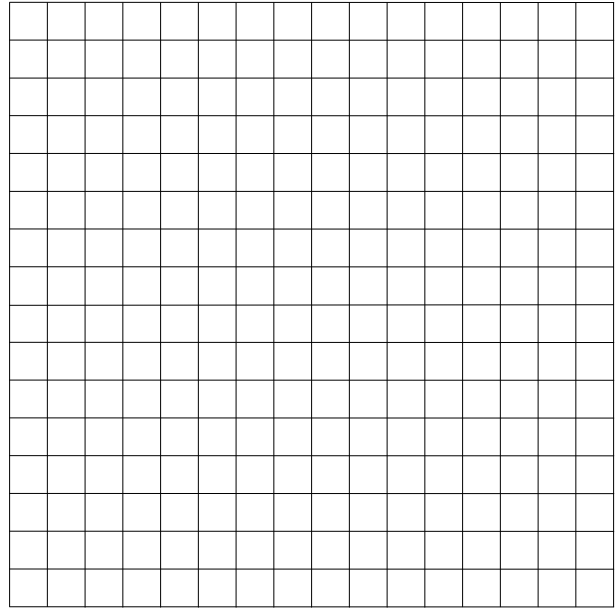**15.   H(3) = _____**

16.   H(0) = _____

17.   H(-4) = _____

Bill walks for 30 seconds at a constant speed of 5 feet per second. Let t represent his walking time (in seconds) and d(t) represent the distance he has walked (in feet). Answer each of the following.

18. Make a table giving t and d(t) every 5 seconds from t = 0 to t = 30.

19. Graph function d.

20. Write an equation giving d(t) in terms of t. _____

21. What is the domain of function d?

_____

22. What is the range of function d?

_____

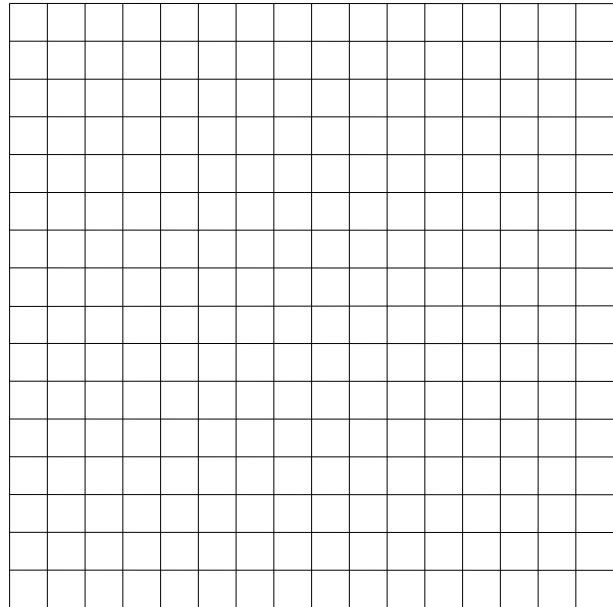**23. Evaluate d(20). What does d(20) represent in terms of the problem?**

24. If d(t) = 20, then find the value of t. Describe what this value of t represents in terms of the problem.

Larry has a part-time job. He can work up to 24 hours a week. He gets paid $6.00 per hour.
Let t represent the number of hours he works. Let P(t) represent his total pay.

25. Make a table giving t and P(t) every 4   **26. Graph function P.**
hours from t = 0 to t = 24.

27. Write an equation giving P(t) in terms of t. _____

28. What is the domain of function P?   **29. What is the range of function P?**

_____   _____

30. Evaluate P(12). What does P(12)   **31. If P(t) = 12, then find the value of t.**
represent in terms of the problem?   **Describe what this value of t represents**
                                               in terms of the problem.

Penguin Island is 30 miles due west of Port City. A Ferry sails from Port City to Penguin Island at a constant speed of 12 miles per hour. Let t represent the time in hours that the Ferry has been sailing. Let D(t) represent the distance in miles that the Ferry is from Penguin Island.

32. Make a table giving t and D(t) every half hour from t = 0 until the Ferry reaches Penguin Island.

33. Graph function D.
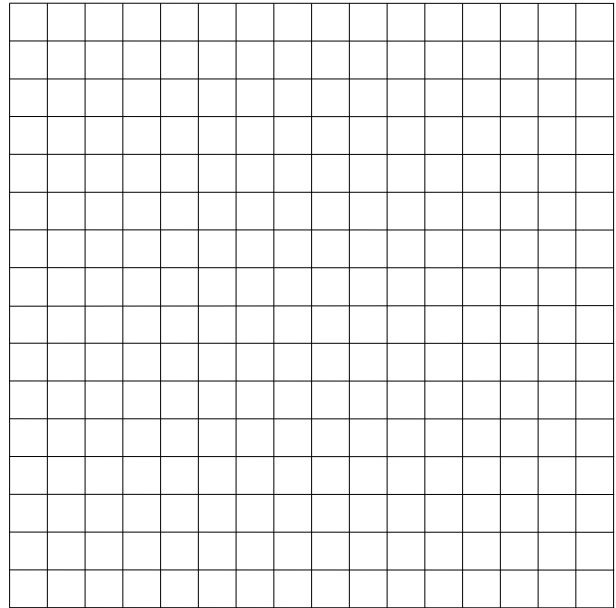
34. Write an equation giving D(t) in terms of t. _____

35. What is the domain of function D?

_____

36. What is the range of function D?

_____

37. Evaluate D(1.25). What does D(1.25) represent in terms of the problem?

38. If D(t) = 6, then find the value of t. Describe what this value of t represents in terms of the problem.

A rectangular water tank is 8 feet long, 6 feet wide, and 5 feet deep. The tank is half-full initially and water is pumped into the tank at 10 cubic feet per minute until the tank is full. Let t represent the time that water has been pumped into the tank (in minutes). Let f(t) represent the depth of the water in the tank (in inches). Answer each of the following. Show your process neatly organized.

39. How long will it take to fill the tank? _____

40. Make a table giving t and f(t) every 4 minutes from t = 0 until the tank is full.

41. Graph function f.
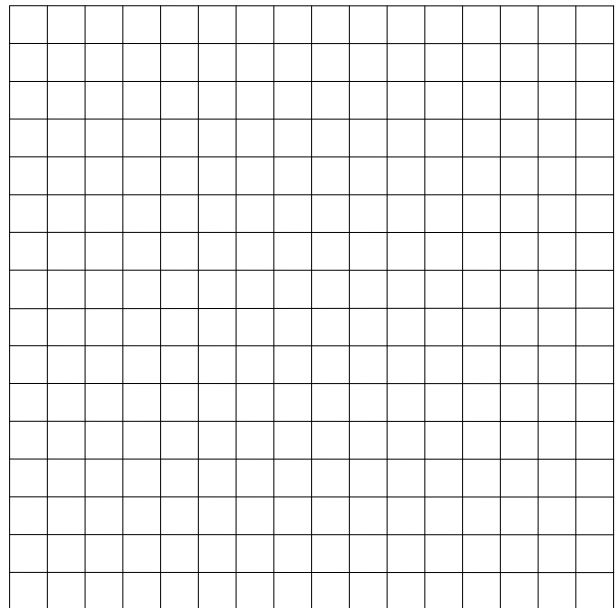
42. Write an equation giving f(t) in terms of t.   _____

43. What is the domain of function f?

_____

44. What is the range of function f?

_____

45. Evaluate f(6). What does f(6) represent in terms of the problem?

46. If f(t) = 55, then find the value of t. Describe what this value of t represents in terms of the problem.