**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ December 19, 2017**

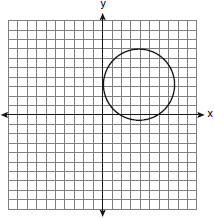
**CC Algebra**

**Unit 5 Functions Test Review**

**1.** Given *f*(*x*) = 7*x* + 8 and *g*(*x*) = –9*x* – 4, find *h*(*x*) = *f*(*x*) – *g*(*x*).

1. *h*(*x*) = -2*x* + 4 **C.**  *h*(*x*) = -2*x* - 4
2. *h*(*x*) = 16*x* + 12 **D.** *h*(*x*) = 16*x* + 4

**2.** Which statement is true about the relation shown on the graph below?



|  |  |
| --- | --- |
| **A.** | It is a function because there exists one *x*-coordinate for each *y*-coordinate. |
| **B.** | It is a function because there exists one *y*-coordinate for each *x*-coordinate. |
| **C.** | It is *not* a function because there are multiple *y*-values for a given *x*-value. |
| **D.** | It is *not* a function because there are multiple *x*-values for a given *y*-value. |

**3.** The function *C*(*t*) gives the cost *C* of buying *t* tickets to a museum exhibit when a group discount is

offered.

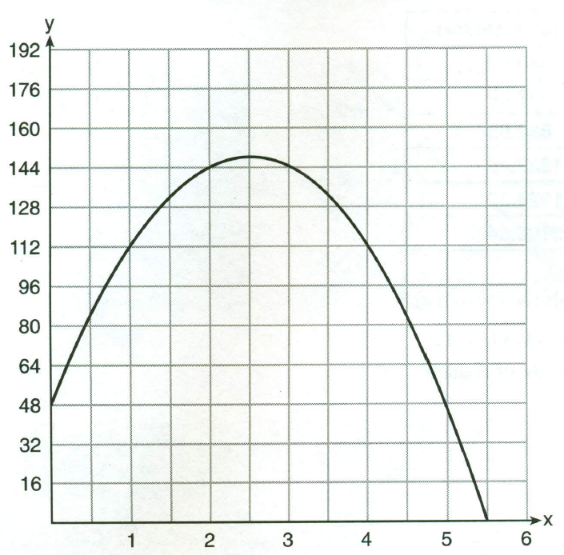


Which statement describes what *C*(10) represents?

1. 10 tickets cost $200 **C.** 10 tickets cost $20
2. 10 tickets cost $180 **D.** 10 tickets cost $18

**4.** A ball is thrown into the air from the edge of a 48-foot-high cliff so that it eventually lands on the

ground. The graph below shows the height, *y*, of the ball from the ground after *x* seconds.



For which interval is the balls’ height always *increasing*?

**A.**  0 < *x* < 2.5 **C.**  2.5 < *x* < 5.5

**B.**  0 < *x* < 5.5 **D.**  *x* > 2

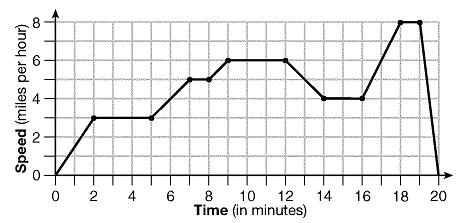
1. If a function is defined by , then which of the following is the value of f(8)?
2. 13  **C.** 67
3. 61 **D.** 7
4. What is the average rate of change between x = 1 and x = 4 when f(x) = x2 + 5 ?

**A.** 5 **B.** 9 **C.** 3 **D.** 15

1. If , for what value of *x* does?

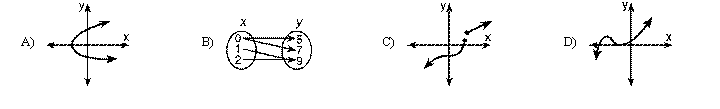
**A.** 1 **B.** -1 **C.** 18 **D.** -2

1. The graph below represents a jogger’s speed during her 20 minute jog around her neighborhood



Which of the following statements *best* describes what the jogger was doing during the 9-12 minute interval of her jog?

1. She was jogging at a constant rate.
2. She was standing still.
3. She was increasing her speed.
4. She was decreasing her speed.
5. Which of the following is a function?



1. If *f(x) = 3x – 1* and *g(x) = 2f(x) + 4* find *g(-2)*

**A**. -14 **C.** -10

**B.** -7  **D.** 10

1. What is the range of the function f(x) = 5 – 8x when the domain is {-2, 2, 4}?

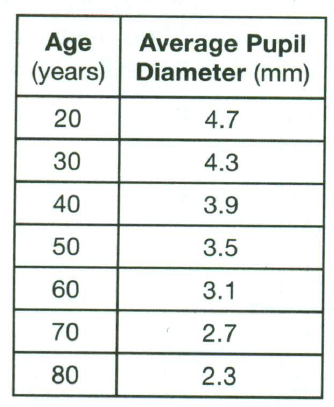
**A.** {-27, -11}  **C.** {-27, -11, 21}

**B.** {-2, 2, 4} **D.** {1/8, 3/8, 7/8}

1. Which set of ordered pairs does *not* represent a function?

|  |  |
| --- | --- |
| **A.** |  |
| **B.** |  |
| **C.** |  |
| **D** |  |

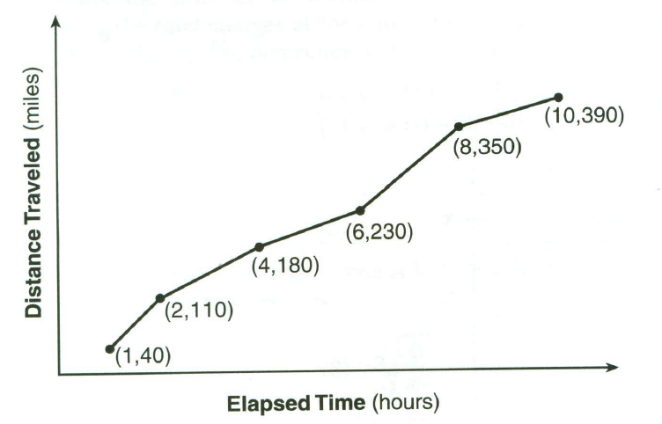
The table below shows the average diameter of a pupil in a person’s eye as he or she grows older.



1. What is the average rate of change, in millimeters per year, of a person’s pupil diameter form age 20 to age 80?

**A.** 2.4 **B**. 0.04 **C.** -2.4 **D.** -0.04

1. The Jamison family kept a log of the distance they traveled during a trip, as represented by the graph below.

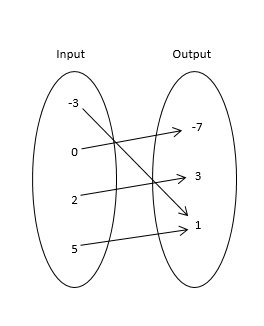
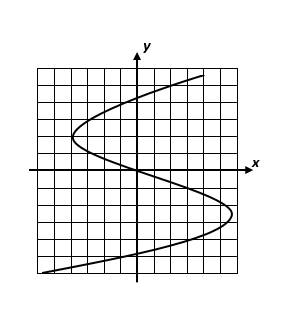
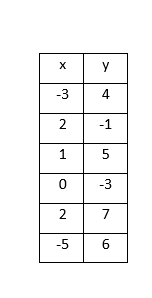


During which interval was their average speed the greatest?

**A.** the first hour to the second hour **C.** the sixth hour to the eighth hour

**B.** the second hour to the fourth hour **D.** the eighth hour to the tenth hour

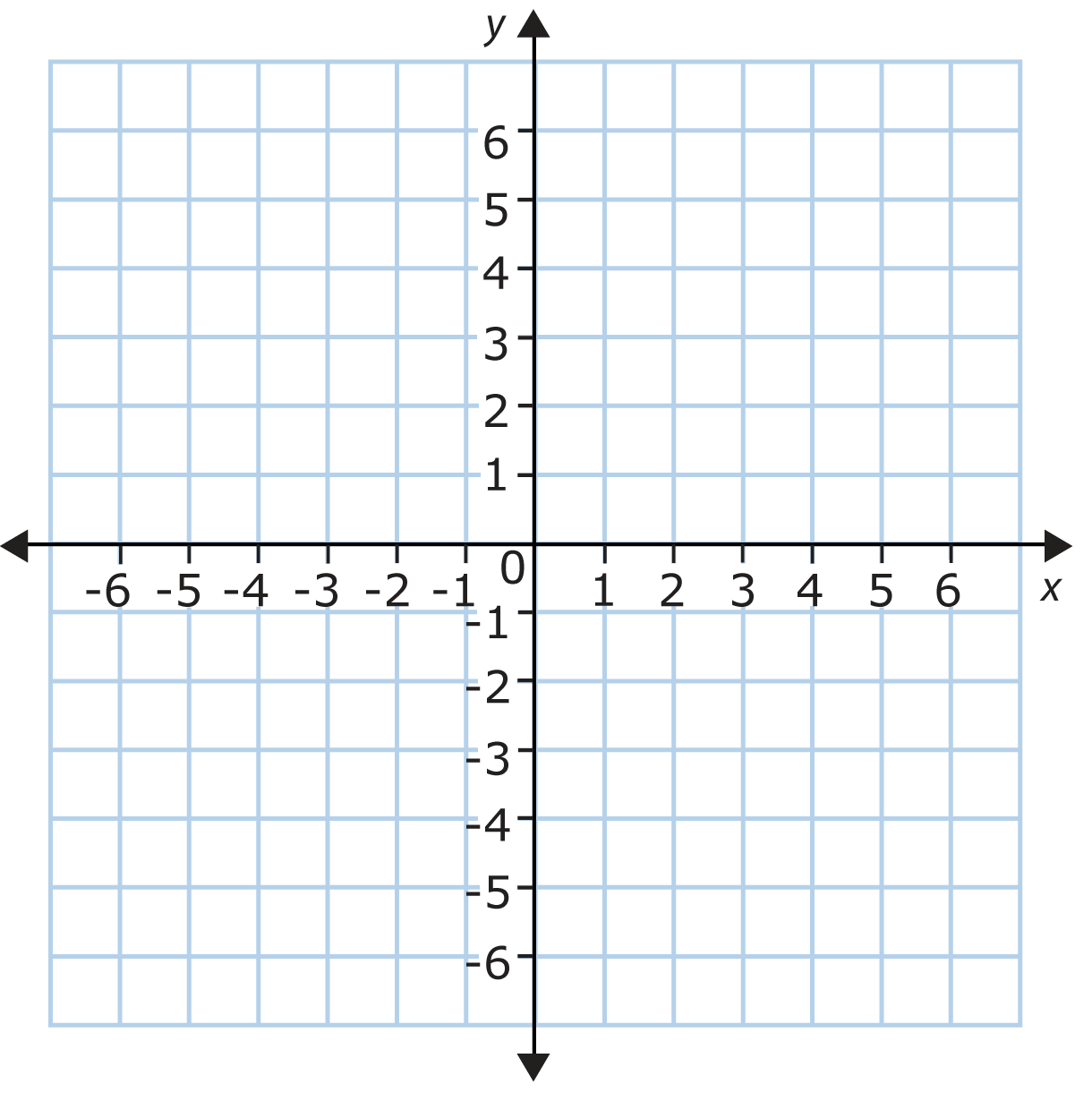
1. Given *f(x) = x + 5* and *g(x) = 4x + 4*, find *h(x) = f(x) – g(x)*
2. Given the relation *f(x)* = 3x – 5, g(x) = -2x + 8, h(x) = f(x) + g(x) find the following:
   1. b.) h*(-1)* =

**17.** Which ***one*** of the following relations***is*** a function, A, B, or C? Explain your reasoning.

***A B C***

**18.** Given the function

**A.** Find **B.** Find the input where

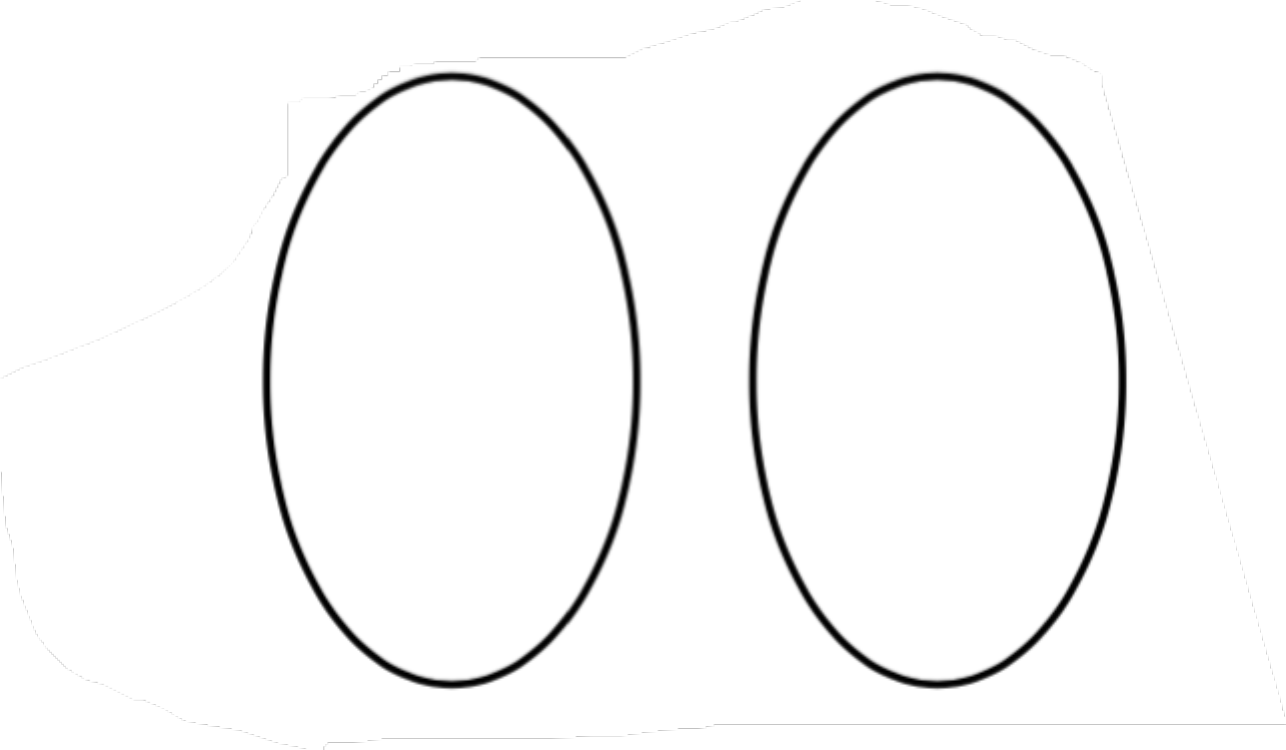
**19.** Graph the following piecewise function

**20.** Use the relation {(-2, 2), (1, 4), (0, -1), (1, -6), (4, -1)}

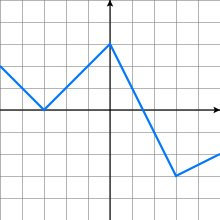
* 1. State the domain and range.

D = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ R = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* 1. Create a mapping diagram



* 1. Is it a function? Explain why or why not



**21.** The function is defined by the graph below.

**A.** Find \_\_\_\_\_\_\_\_\_\_\_ Find \_\_\_\_\_\_\_\_\_\_

**B.** State the zeros of the function.

**C.** Find all x-values such that

**D.** What is the y-intercept of the function? \_\_\_\_\_\_\_\_\_\_\_

**E.** Find the coordinates for the ***absolute*** maximum and minimum values.

Maximum \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Minimum \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**F.** Over what two intervals is the function decreasing?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**G.** Is the function positive or negative over the interval ? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**H.** State ***one*** interval where the function is negative \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

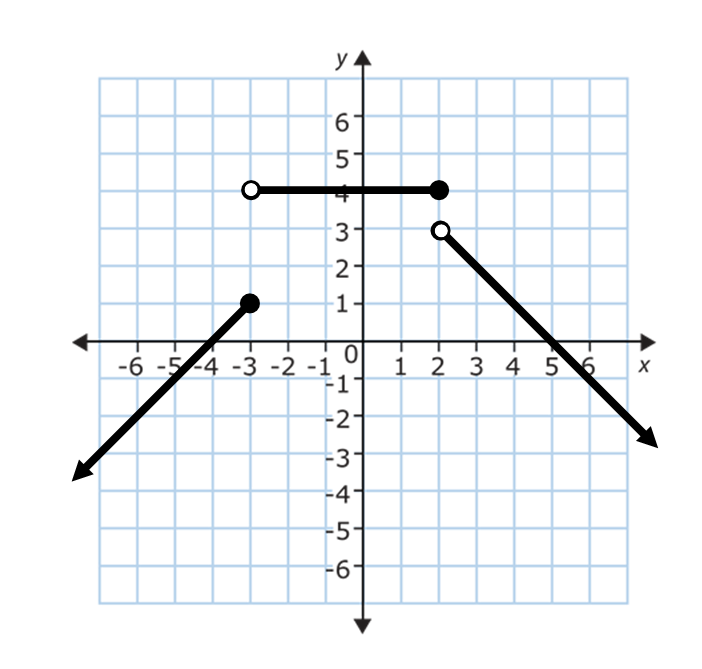
1. B
2. C
3. B
4. A
5. B
6. A
7. B
8. A
9. D
10. C
11. C
12. B
13. D
14. A
15. –3x + 1

1. **a.** *h(2)* = 5

**b.** *h(-1)* = 2

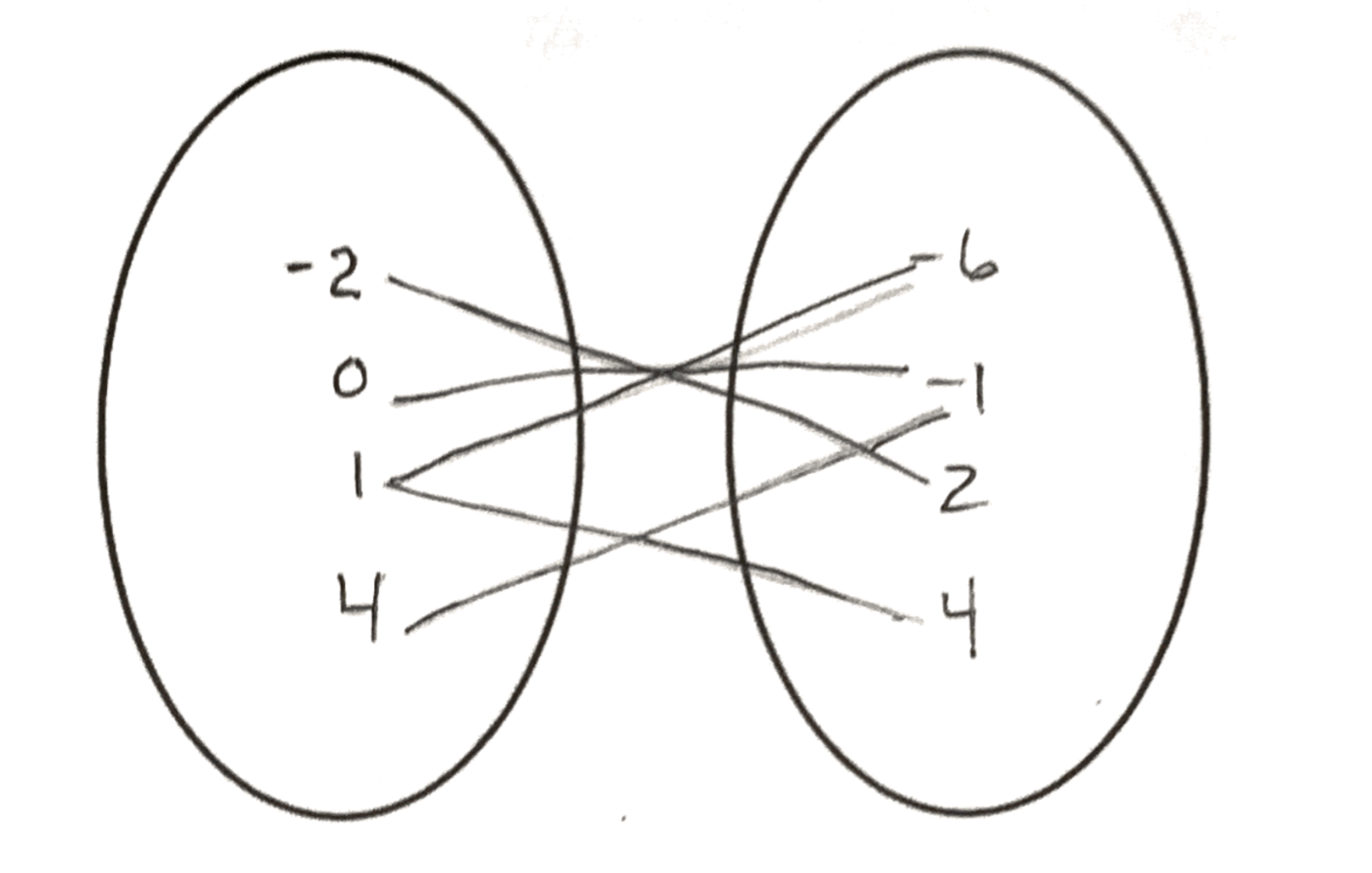
1. A, no repeating x-values
2. **a*.*** *f(9)* = 1 & *f(-6)* = -9

**b.** x = -15



1. D = {-2, 0, 1, 4}

R = {-6, -1, 2, 4}



Not a function

1. **a.** *f(-5)* = 1

*f(0)* = 3

**b.** x = -3,

**c.** x = -4, -1, 1

**d.** y = 3

**e.** Max (0, 3)

Min (3, -3)

**f.** (-5, -3) and (0, 3)

**g.** Positive

**h.** (