

**Problems of the Week: Quarter 4 Week 2**

**Due Date** \_\_\_\_\_

Show work OR write an explanation of how you arrived at your answer on a separate piece of paper. **Work or explanation is required for each problem to receive credit!!** Write the letter of your final answers in the answer box. You may use a calculator.

1. Which equation is *not* linear?

**A**  $2x + 3y = 12$

**B**  $y = -7$

**C**  $2x + x^2 = 5$

**D**  $y = \frac{2}{3}x - 5$

2. A homeowner's monthly telephone bill can be calculated using  $b = 0.08m + 32.50$  where  $m$  is the number of minutes the phone is used each month. Whether a customer uses the phone or not, there is a monthly fee. What is this monthly fee?

**A** \$112.50

**B** \$40.50

**C** \$32.58

**D** \$32.50

3. The table reflects the gold-winning Olympic high jump performance over the years, in inches. What can probably be said about the winning performance in the year 1996?

Year	1896	1912	1920	1948	1952	1984	1992
Height	71.25	76	76.25	78	80.32	92.5	92

**A** It was less than or equal to 92 inches.

**B** It was less than 88 inches.

**C** It was in the range 90 - 95 inches.

**D** It was exactly 93 inches.

4. Identify the slope of  $8x - 3y = 12$  without graphing the line.

**A**  $-\frac{8}{3}$

**B**  $\frac{3}{8}$

**C**  $\frac{8}{3}$

**D** 12

5. The data listed is supposed to be able to be represented by a line with a slope of  $\frac{2}{3}$ . Which point does *not* belong?

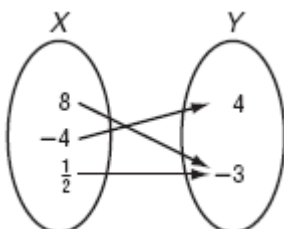
**A** (4, 4)

**B** (12, 14)

**C** (10, 8)

**D** (25, 18)

6.



What is the range of the function?

**A** {8, 4}

**B**  $\{8, -4, \frac{1}{2}\}$

**C** {4, -3}

**D**  $\{8, -4, \frac{1}{2}, 4, -3\}$

**Answers**

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

8. \_\_\_\_\_

9. \_\_\_\_\_

10. \_\_\_\_\_

11. \_\_\_\_\_

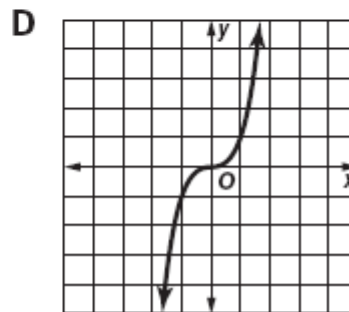
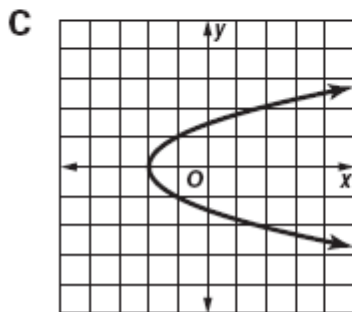
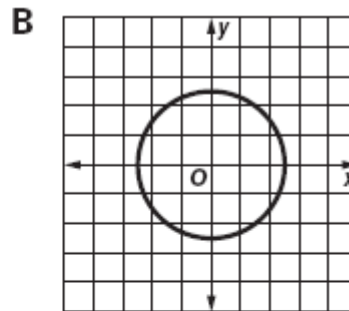
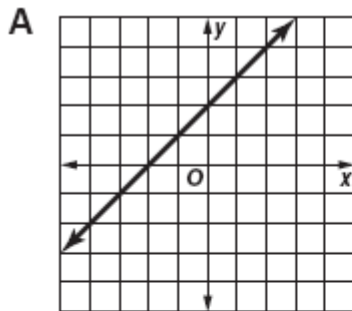
12. \_\_\_\_\_

13. \_\_\_\_\_

14. \_\_\_\_\_

15. \_\_\_\_\_

7. Which is the graph of a linear function?



8. Which answer gives the x-intercept and y-intercept of the linear equation  $-3x + 5y = 30$ ?

**A**  $(-10, 0)$  and  $(0, 6)$

**B**  $(0, -10)$  and  $(0, 6)$

**C**  $(-10, 0)$  and  $(6, 0)$

**D**  $(0, -10)$  and  $(6, 0)$

9. A museum has an interactive exhibit on U.S. mountains. Entering a natural number  $n$  causes it to speak the name of the  $n$ th highest mountain in the United States. Entering number 16 causes it say Mt. Mitchell. This exhibits model a function. What is the domain?

**A** the numbers entered

**B** the interactive exhibit

**C** the museum

**D** the names of the mountains

10. What is the range of the function described in Problem 9?

**A** the numbers entered

**B** the interactive exhibit

**C** the museum

**D** the names of the mountains

11. What can be said about data that can be represented by a line with a positive slope?

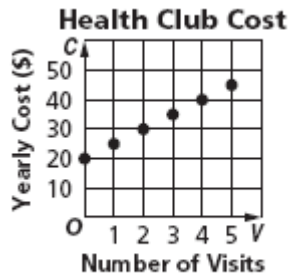
**A** The data is increasing.

**B** The data is inconsistent.

**C** The data is decreasing.

**D** All of the data must be integers.

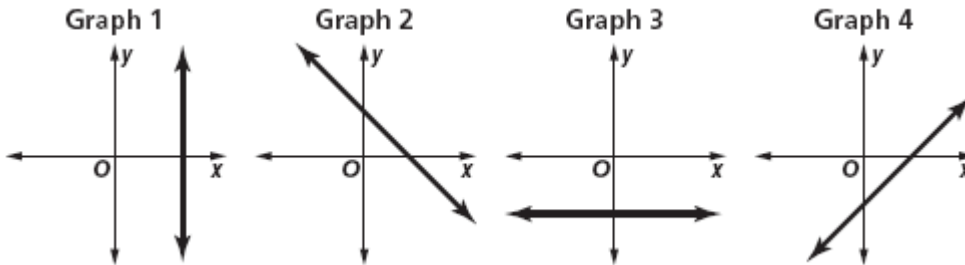
12.



A health club charges an annual membership fee plus five dollars per visit. The data, which can be represented by the formula for a line, compares the yearly cost  $C$  of attending based on the number of visits  $V$ . What does the  $C$ -intercept represent?

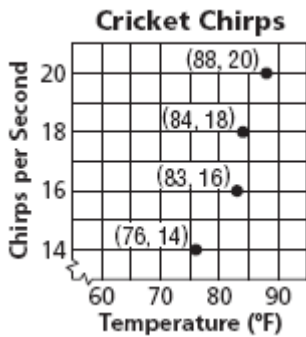
- A** The  $C$ -intercept represents the annual membership fee.
- B** The data has to have a starting place and the point graphed is as good a place to start as any.
- C** Since each visit costs \$5, after 4 visits the cost would be \$20, thus the starting point of 20.
- D** The  $C$ -intercept has nothing to do with this problem.

13. Which graph appears to have an undefined slope?



- A** Graph 1
- B** Graph 2
- C** Graph 3
- D** Graph 4

14.



Crickets make their chirping sounds by rapidly sliding one wing over the other. Scientists have noticed that the warmer the weather, the faster they move their wings. The graph relates the number of chirping sounds per second to temperature in degrees Fahrenheit. What is the domain?

- A** {76, 83, 84, 88}
- B** the crickets
- C** pt. (20, 88)
- D** {14, 16, 18, 20}

15. The data from Problem 14 are ordered pairs in the form (Temperature, Chirps per Seconds). What is the range of these data?

- A** {14, 16, 18, 20}
- B** the crickets
- C** pt. (88, 20)
- D** {76, 83, 84, 88}