

Put the LETTER of the correct answer in the box

1)

10)

2)

12)

3)

14)

6)

17)

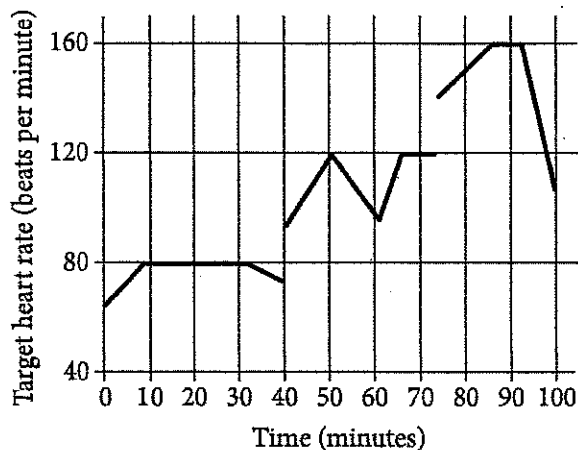
9)

19)



1

John runs at different speeds as part of his training program. The graph shows his target heart rate at different times during his workout. On which interval is the target heart rate strictly increasing then strictly decreasing?



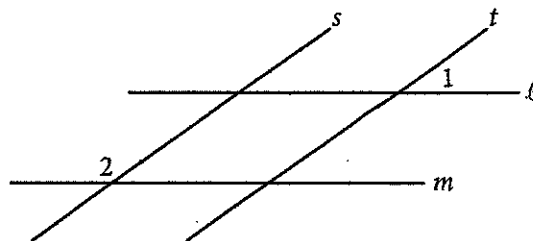
- A) Between 0 and 30 minutes
- B) Between 40 and 60 minutes
- C) Between 50 and 65 minutes
- D) Between 70 and 90 minutes

2

If $y = kx$, where k is a constant, and $y = 24$ when $x = 6$, what is the value of y when $x = 5$?

- A) 6
- B) 15
- C) 20
- D) 23

3



In the figure above, lines ℓ and m are parallel and lines s and t are parallel. If the measure of $\angle 1$ is 35° , what is the measure of $\angle 2$?

- A) 35°
- B) 55°
- C) 70°
- D) 145°

4

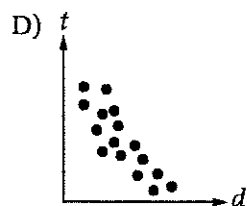
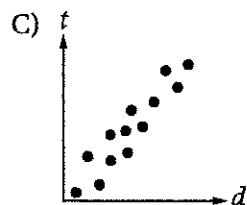
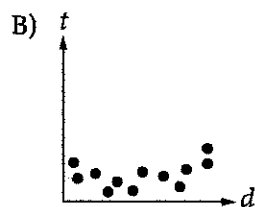
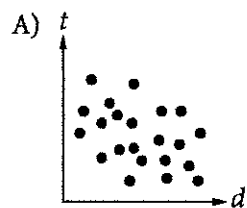
If $16 + 4x$ is 10 more than 14, what is the value of $8x$?

- A) 2
- B) 6
- C) 16
- D) 80



5

Which of the following graphs best shows a strong negative association between d and t ?



6

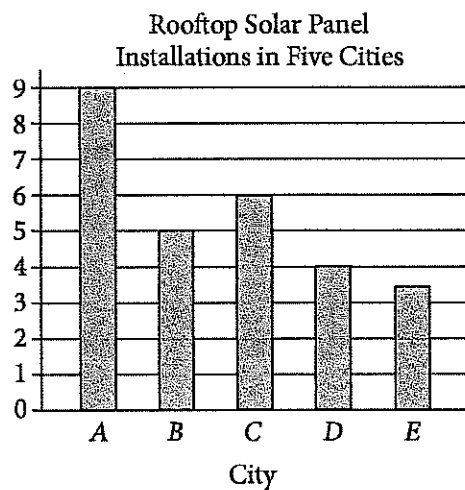
1 decagram = 10 grams
1,000 milligrams = 1 gram

A hospital stores one type of medicine in 2-decagram containers. Based on the information given in the box above, how many 1-milligram doses are there in one 2-decagram container?

- A) 0.002
- B) 200
- C) 2,000
- D) 20,000



7



The number of rooftops with solar panel installations in 5 cities is shown in the graph above. If the total number of installations is 27,500, what is an appropriate label for the vertical axis of the graph?

- A) Number of installations (in tens)
- B) Number of installations (in hundreds)
- C) Number of installations (in thousands)
- D) Number of installations (in tens of thousands)

8

For what value of n is $|n - 1| + 1$ equal to 0?

- A) 0
- B) 1
- C) 2
- D) There is no such value of n .



Questions 9 and 10 refer to the following information.

$$a = 1,052 + 1.08t$$

The speed of a sound wave in air depends on the air temperature. The formula above shows the relationship between a , the speed of a sound wave, in feet per second, and t , the air temperature, in degrees Fahrenheit ($^{\circ}\text{F}$).

9

Which of the following expresses the air temperature in terms of the speed of a sound wave?

- A) $t = \frac{a - 1,052}{1.08}$
- B) $t = \frac{a + 1,052}{1.08}$
- C) $t = \frac{1,052 - a}{1.08}$
- D) $t = \frac{1.08}{a + 1,052}$

10

At which of the following air temperatures will the speed of a sound wave be closest to 1,000 feet per second?

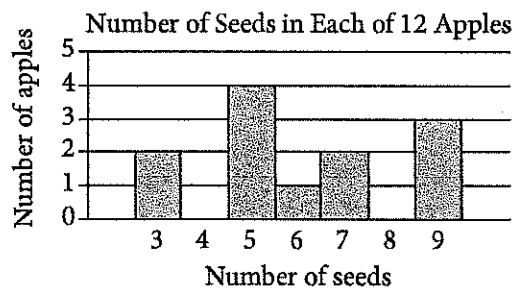
- A) -46°F
- B) -48°F
- C) -49°F
- D) -50°F

11

Which of the following numbers is NOT a solution of the inequality $3x - 5 \geq 4x - 3$?

- A) -1
- B) -2
- C) -3
- D) -5

12



Based on the histogram above, of the following, which is closest to the average (arithmetic mean) number of seeds per apple?

- A) 4
- B) 5
- C) 6
- D) 7



13

		Course			Total
		Algebra I	Geometry	Algebra II	
Gender	Female	35	53	62	150
	Male	44	59	57	160
	Total	79	112	119	310

A group of tenth-grade students responded to a survey that asked which math course they were currently enrolled in. The survey data were broken down as shown in the table above. Which of the following categories accounts for approximately 19 percent of all the survey respondents?

- A) Females taking Geometry
- B) Females taking Algebra II
- C) Males taking Geometry
- D) Males taking Algebra I

14

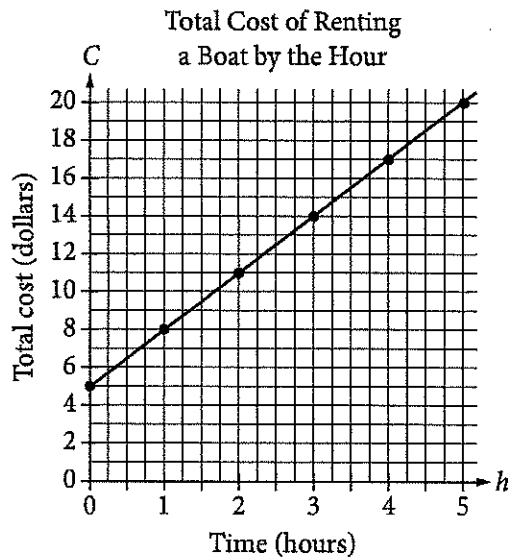
Lengths of Fish (in inches)						
8	9	9	9	10	10	11
11	12	12	12	12	13	13
13	14	14	15	15	16	24

The table above lists the lengths, to the nearest inch, of a random sample of 21 brown bullhead fish. The outlier measurement of 24 inches is an error. Of the mean, median, and range of the values listed, which will change the most if the 24-inch measurement is removed from the data?

- A) Mean
- B) Median
- C) Range
- D) They will all change by the same amount.



Questions 15 and 16 refer to the following information.



The graph above displays the total cost C , in dollars, of renting a boat for h hours.

15

What does the C -intercept represent in the graph?

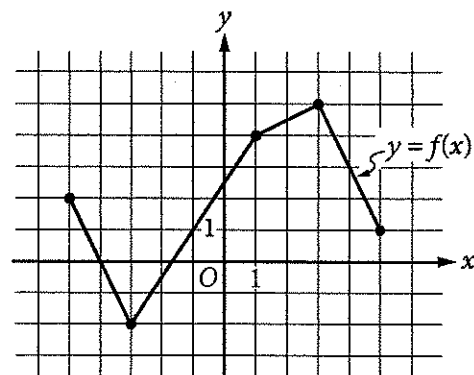
- A) The initial cost of renting the boat
- B) The total number of boats rented
- C) The total number of hours the boat is rented
- D) The increase in cost to rent the boat for each additional hour

16

Which of the following represents the relationship between h and C ?

- A) $C = 5h$
- B) $C = \frac{3}{4}h + 5$
- C) $C = 3h + 5$
- D) $h = 3C$

17



The complete graph of the function f is shown in the xy -plane above. For what value of x is the value of $f(x)$ at its minimum?

- A) -5
- B) -3
- C) -2
- D) 3



18

$$y < -x + a$$

$$y > x + b$$

In the xy -plane, if $(0, 0)$ is a solution to the system of inequalities above, which of the following relationships between a and b must be true?

- A) $a > b$
- B) $b > a$
- C) $|a| > |b|$
- D) $a = -b$

19

A food truck sells salads for \$6.50 each and drinks for \$2.00 each. The food truck's revenue from selling a total of 209 salads and drinks in one day was \$836.50. How many salads were sold that day?

- A) 77
- B) 93
- C) 99
- D) 105