Practice Midterm (Math 8)

Name_____ **Period**_____

1. Which of the following is NOT equivalent to $\left(\frac{4}{9}\right)^{-2}$

A. $\left(\frac{9}{4}\right)^{2}$
B. 81/16
C. 16/81
D. $(2.25)^{2}$

2 Which statement **best** explains whether these ordered pairs represent a function?

(-2 , 2), (5 , 4), (-8 , 3), (9 , 11), (13, 14), (-5 , 9)

A The ordered pairs represent a function because no input values are repeated.
B The ordered pairs represent a function because each output value is greater than each input value.
C The ordered pairs do not represent a function because one input value has two different output values.
D The ordered pairs do not represent a function because the difference between the input and output of each ordered pair is not the same.

3 Which equation represents a linear function?

A $\boldsymbol{y = \frac{3}{x}}$

B $\boldsymbol{y = x^3}$

C $\boldsymbol{y = 3x}$

D $\boldsymbol{y = 3^x}$

4 Rectangle A has an area of 2.5 x 10^5 square meters and rectangle B has an area of of 5 x 10^3 square meters. How many times larger is the area of rectangle A compared to the area of rectangle B?

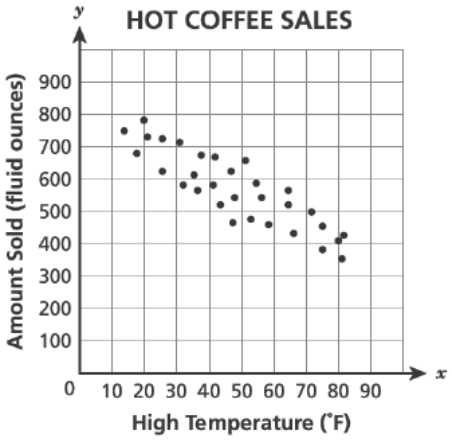
A **50 times greater**

B **20 times greater**

C **200 times greater**

D **500 times greater**

5 The owner of a coffee shop compared the amount of hot coffee per day, in fluid ounces, sold and the daily high temperature, in degrees Fahrenheit, per day. Her data are shown in the scatter plot below.



If these data are modeled by the line $y = -5.9x + 850$, which statement **best** describes a valid prediction then owner could make?

A. For each temperature increase of 10°F, the shop can expect to sell about 800 fluid ounces more hot coffee

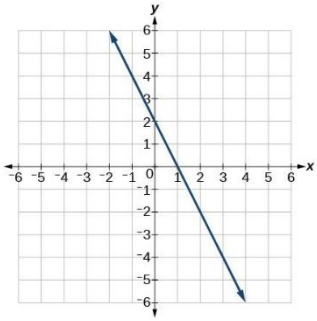
B. For each temperature increase of 10°F, the shop can expect to sell about 791 fluid ounces more hot coffee

C. On a day with a high temperature of 0°F, the shop can expect to sell about 145 fluid ounces of hot coffee

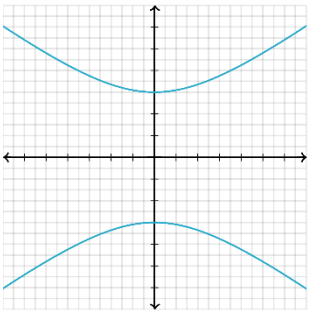
D. On a day with a high temperature of 0°F, the shop can expect to sell about 59 fluid ounces of hot coffee

6 Which graph below does **not** represent a function of x?

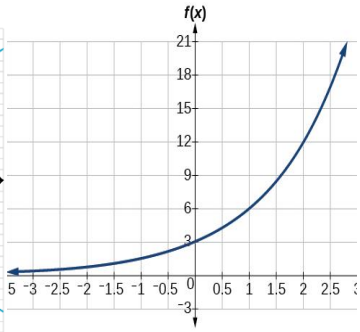
A.



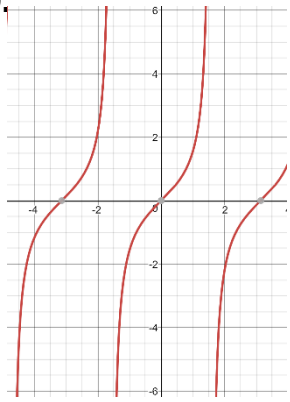
B.



C.



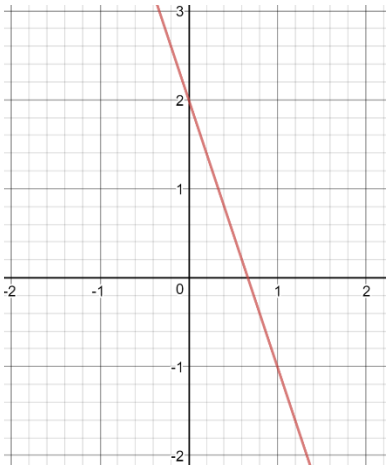
D.



7 A company performed power tests on a set of batteries of the same type. The company determined that the equation $y = 220 - 9.1x$, where x is the number of hours of use and y is the percent of battery power remaining, models the battery life. Based on the equation, what is the **best** prediction of the percent of remaining power for a battery after 22 hours of use?

A. 11.2
B. 19.8
C. 10.02
D. 7.9

8 Which equation represents the function graphed to the right?



A. $y = 2x - 3$
B. $y = 3x + 2$
C. $y = -\frac{1}{3}x + 2$
D. $y = -3x + 2$

9 What is the slope of a line that passes through (-6,6) and (9,3)?

A. -1/5
B. 5
C. 3/5
D. -5

10

Makayla is doing a report to see if students are more likely to do chores if they receive an allowance. Her frequency chart is shown below. The relative frequency of students who do not get an allowance but do chores

	Allowance	No Allowance	Total
Chores	8	4	12
No Chores	2	6	8
Total	10	10	20

A 25%
B 40%
C 65%
D 80%

11 What is the value of *t* that satisfies the equation below?

$$5(t + 4) = 2(3t - 5) + 7$$

A. 31
B. -14/3
C. 9/11
D. 23

12. A school club had a T-shirt sale to raise money. After the sale, an inventory showed that 96 blue T-shirts and 108 green T-shirts had been sold. The size of these T-shirts included 60 small, 86 medium, and 58 large. Which table correctly represents these data?

A

NUMBER OF T-SHIRTS SOLD

Color	Small	Medium	Large
Blue	60	86	58
Green	60	86	58

B

NUMBER OF T-SHIRTS SOLD

Color	Small	Medium	Large
Blue	34	46	28
Green	26	40	30

C

NUMBER OF T-SHIRTS SOLD

Color	Small	Medium	Large
Blue	30	43	29
Green	30	43	29

D

NUMBER OF T-SHIRTS SOLD

Color	Small	Medium	Large
Blue	26	40	30
Green	34	46	28

13. The scatter plot shows the sizes and annual rents of some office spaces in the downtown area of a city where x represents the office size and y represents the rent in dollars.

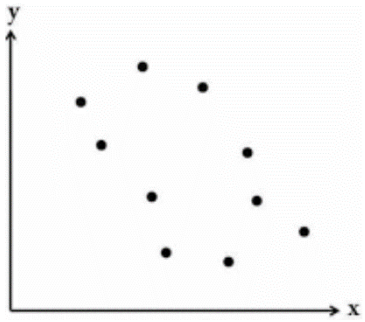
What would the line of best fit reveal about these data?

A There is a strong negative relationship between the cost of rent and the size of the office space.

B There is a strong positive relationship between the cost of rent and the size of the office space.

C There is a weak positive relationship between the cost of rent and the size of the office space.

D There is a weak negative relationship between the cost of rent and the size of the office space.



14 Which of the following is not a solution to the equation $y = \frac{2}{3}x + 4$?

A. (0 , 4)
B. (3 , 6)
C. (9 , 9)
D. (15 , 14)

15 The graph of a function is shown below. For which interval of *x* is the function increasing and nonlinear?

A between -4 and -2

B between -2 and 0

C between 0 and 2

D between 2 and 4