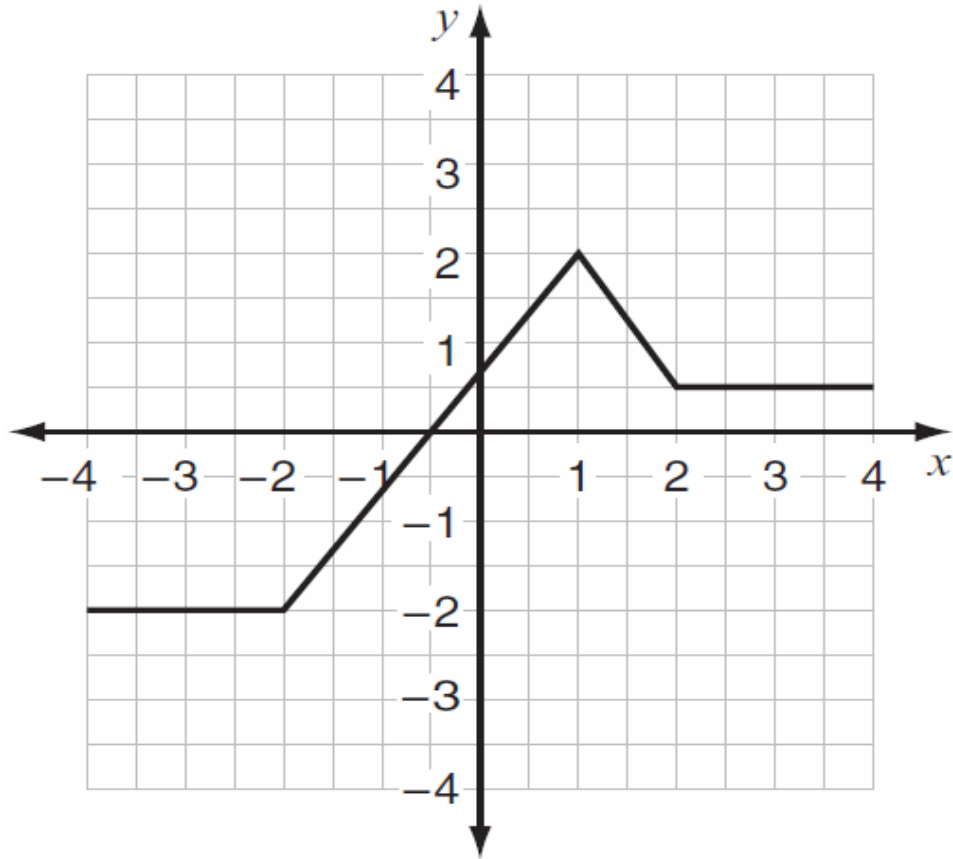


Algebra Quick Quiz 02072020

Question 1

Look at this graph of a function.

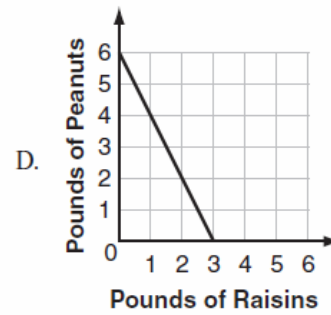
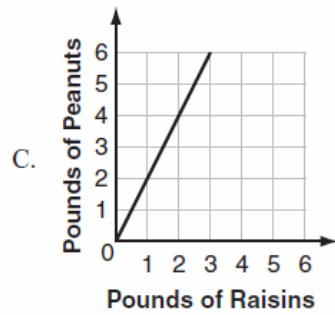
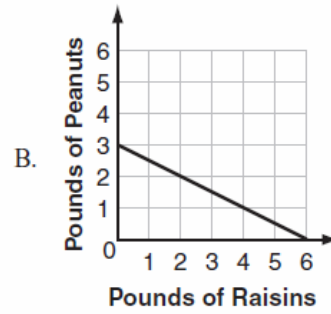
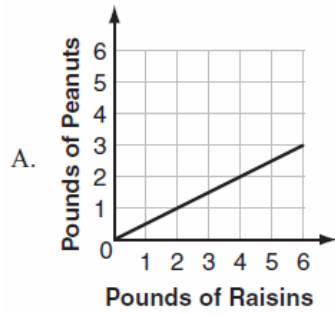


For which values of x does the function have a rate of change that is less than zero?

- A. between -4 and -2
- B. between -2 and 1
- C. between 1 and 2
- D. between 2 and 4

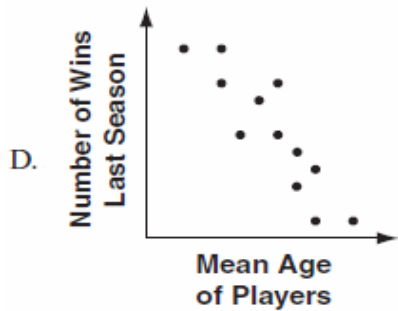
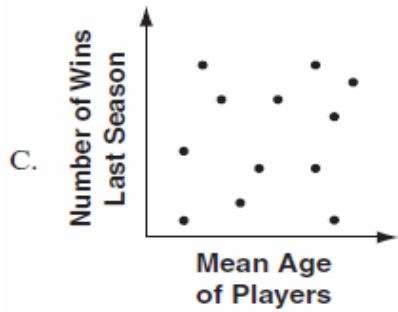
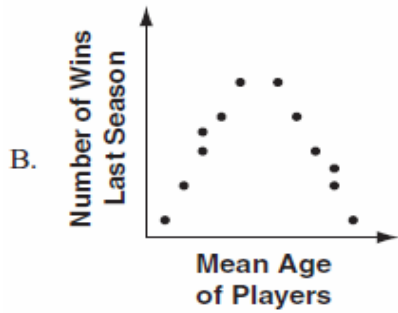
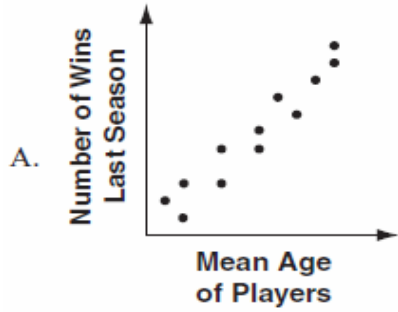
Question 2

Trevor has \$6 to spend on raisins and peanuts. Raisins cost \$1 per pound, and peanuts cost \$2 per pound. Which graph shows the relationship between the number of pounds of raisins and the number of pounds of peanuts that Trevor can buy?



Question 3.

Which graph shows a strong negative correlation between the mean age of the players on professional basketball teams and the number of wins last season?



Question 4.

This table shows a relationship between x and y .

x	5	10	15	20
y	$\frac{1}{10}$	$\frac{1}{20}$	$\frac{1}{30}$	$\frac{1}{40}$

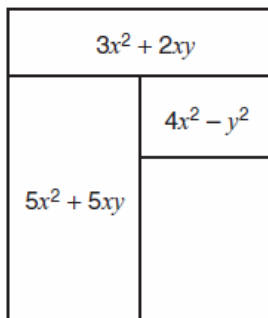
Write an equation that shows the same relationship between x and y as in the table.

Question 5.

The width of a rectangle is w feet. The length of the rectangle is 3 feet less than twice its width. Write an expression that represents the area, in square feet, of the rectangle in terms of w .

Question 6.

The expression inside each of these rectangles represents the area, in square units, of the rectangle.



- Write an algebraic expression in simplified form to represent the sum of the areas of all the rectangles.
- What is the total area, in square units, of the rectangles when $x = 5$ and $y = 2$?

Question 7.

Sophia uses the equation below to estimate the percent, p , of games a baseball team is expected to win based on the number of runs scored, s , and the number of runs the team allows, a .

$$p = \frac{s^2}{s^2 + a^2} \times 100$$

Sophia's favorite baseball team scored 200 runs and allowed 150 runs. What percent of games is this team expected to win?

Question 8.

A theater group earned a total of \$5180 selling tickets to a musical.

- Tickets for balcony seats sold for \$5 each.
- Tickets for orchestra seats sold for \$8 each.
- The group sold four times as many tickets for balcony seats as for orchestra seats.

How many tickets for balcony seats were sold?

- A. 140
- B. 360
- C. 560
- D. 740

Question 9.

What are the coordinates of the point where the lines $y = 2x - 1$ and $y = 4x + 13$ intersect? Show your work or explain how you know.

Question 10.

The table below shows the relationship between x and $f(x)$ for the linear function $f(x)$.

x	$f(x)$
0	10
2	2
4	-6
6	-14

What is the slope of $f(x)$?

- A. -8
- B. -4
- C. 4
- D. 8

Bonus Question

Question 11



Mathematics

Use the information provided to answer Part A through Part D for question 40.

The population of a city in 2005 was 36,000. By 2010, the city's population had grown to 43,800 people.

40. Part A

Assuming that the population of the city has grown linearly since 2005 and continues to grow at the same rate, what will be the population in 2015?

Enter your answer in the box.

Part B

Which expression is an appropriate exponential model for the population of the city? Let t represent the time, in years, since 2005.

- A. $36,000(1.04)^t$
- B. $36,000(1.04)^{5t}$
- C. $36,000(1.217)^t$
- D. $36,000(1.217)^{5t}$

Part C

Assuming that the population of the city has grown exponentially since 2005 and continues to grow at the same rate, what will be the population in 2015? Give your answer to the nearest whole number.