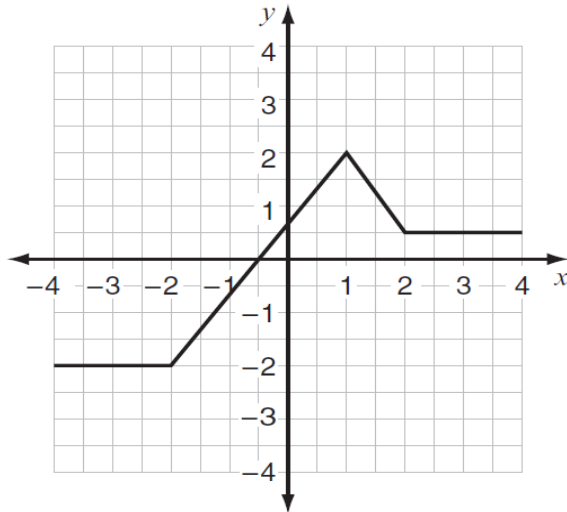Algebra 1 Quick Quiz 03212023

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

The formula $Ax + By = C$ represents the equation of a line in standard form. Which expression represents y in terms of A, B, C, and x?
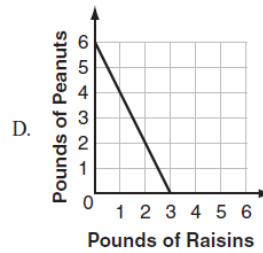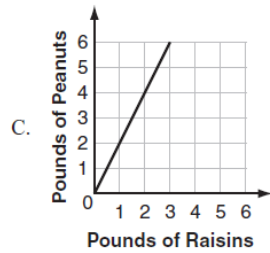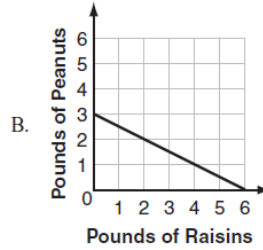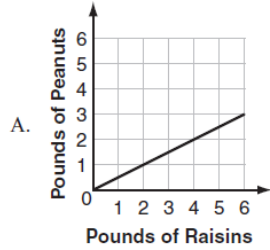
(1) $\dfrac{C - Ax}{B}$ (3) $\dfrac{C - A}{x + B}$

(2) $\dfrac{C - A}{Bx}$ (4) $\dfrac{C - B}{Ax}$

Question 3.

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?

A.

Pounds of Peanuts
6 5 4 3 2 1 0
1 2 3 4 5 6
Pounds of Raisins

B.

Pounds of Peanuts
6 5 4 3 2 1 0
1 2 3 4 5 6
Pounds of Raisins

C.

Pounds of Peanuts
6 5 4 3 2 1 0
1 2 3 4 5 6
Pounds of Raisins

D.

Pounds of Peanuts
6 5 4 3 2 1 0
1 2 3 4 5 6
Pounds of Raisins

Question 4.

What are the zeros of $f(x) = (2x - 4)(3x + 4)$?

(1) $\left\{-\frac{4}{3}, 2\right\}$

(3) $\left\{-2, \frac{4}{3}\right\}$

(2) $\{-4, 4\}$

(4) $\{-4, 2\}$

Question 5.

A quadratic function and a linear function are graphed on the same set of axes. Which situation is *not* possible?

(1) The graphs do not intersect.

(2) The graphs intersect in one point.

(3) The graphs intersect in two points.

(4) The graphs intersect in three points.

Question 6.

Joe has dimes and nickels in his piggy bank totaling $1.45. The number of nickels he has is 5 more than twice the number of dimes, d. Which equation could be used to find the number of dimes he has?

(1) $0.10d + 0.05(2d + 5) = 1.45$

(2) $0.10(2d + 5) + 0.05d = 1.45$

(3) $d + (2d + 5) = 1.45$

(4) $(d - 5) + 2d = 1.45$

Question 7.

The first term in a sequence is 5 and the fifth term is 17. What is the common difference?

(1) 2.4   (3) 3

(2) 12   (4) 4

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.