Algebra 1 Quick-Quiz-02052024

Question 1.

During the 2010 season, football player McGee's earnings, m, were 0.005 million dollars more than those of his teammate Fitzpatrick's earnings, f. The two players earned a total of 3.95 million dollars. Which system of equations could be used to determine the amount each player earned, in millions of dollars?

(1) $m + f = 3.95$
$m + 0.005 = f$

(2) $m - 3.95 = f$
$f + 0.005 = m$

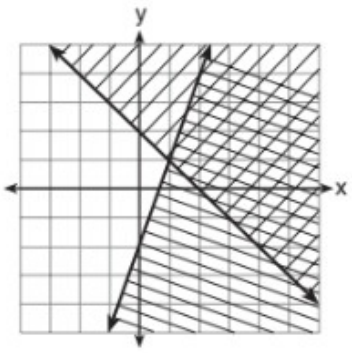
(3) $f - 3.95 = m$
$m + 0.005 = f$

(4) $m + f = 3.95$
$f + 0.005 = m$

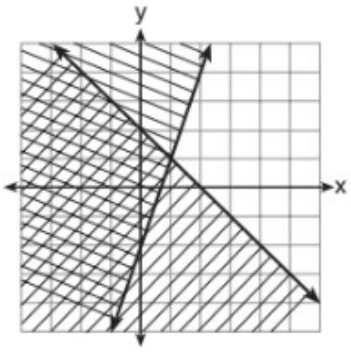
Question 2

Given: $y + x > 2$
$y \leq 3x - 2$

Which graph shows the solution of the given set of inequalities?



(1)



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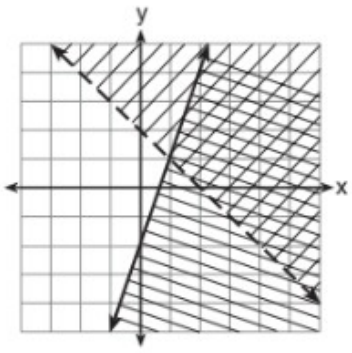

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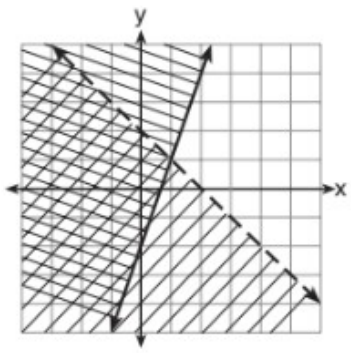
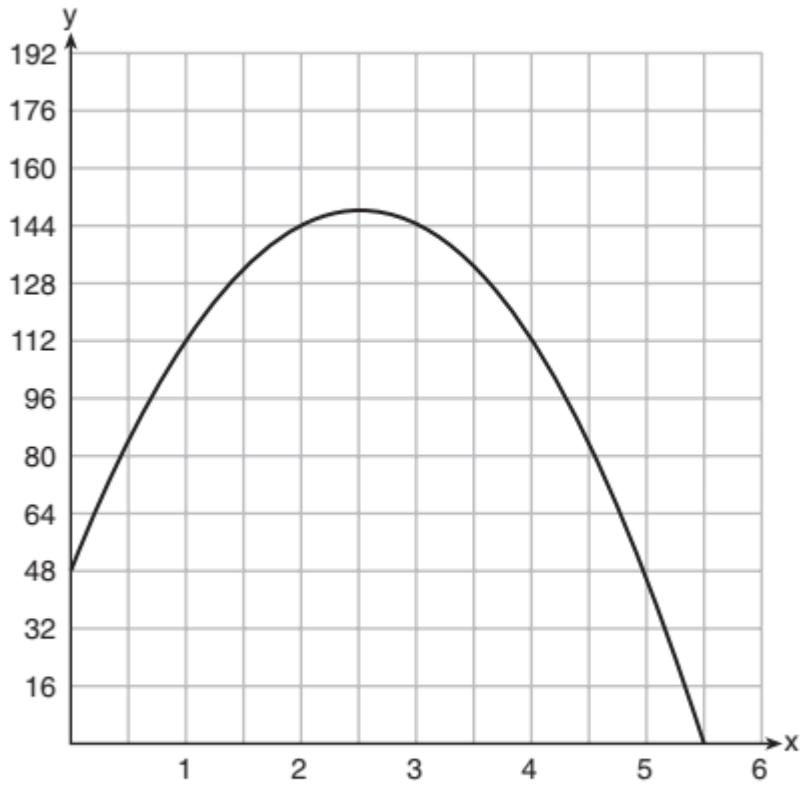


(4)

Question 3.

A ball is thrown into the air from the edge of a 48-foot-high cliff so that it eventually lands on the ground. The graph below shows the height, y, of the ball from the ground after x seconds.



For which interval is the ball's height always *decreasing*?

(1) $0 \leq x \leq 2.5$

(2) $0 < x < 5.5$

(3) $2.5 < x < 5.5$

(4) $x \geq 2$

Question 4.

The table below shows the average yearly balance in a saving account where interest is compounded annually. No money is deposited or withdrawn after the initial amount is deposited.

Year	Balance, in Dollars
0	380.00
10	562.49
20	832.63
30	1232.49
40	1824.39
50	2700.54

Which type of function best models the given data?

(1) linear function with a negative rate of change

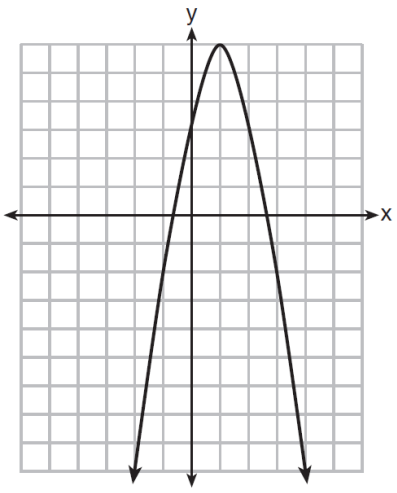
(2) linear function with a positive rate of change

(3) exponential decay function

(4) exponential growth function

Question 5.

Let f be the function represented by the graph below.



Let g be a function such that $g(x) = -\frac{1}{2}x^2 + 4x + 3$.

Determine which function has the larger maximum value. Justify your answer.

Question 6.

Solve the inequality below to determine and state the smallest possible value for x in the solution set.

$$3(x + 3) \leq 5x - 3$$

Question 7.

In a basketball game, Marlene made 16 field goals. Each of the field goals were worth either 2 points or 3 points, and Marlene scored a total of 39 points from field goals.

25. Part A

Let x represent the number of two-point field goals and y represent the number of three-point field goals. Which equations can be used as a system to model the situation?

Select **all** that apply.

Ⓐ $x + y = 16$

Ⓑ $x + y = 39$

Ⓒ $2x + 3y = 16$

Ⓓ $2x + 3y = 39$

Ⓔ $3x + 2y = 16$

Ⓕ $3x + 2y = 39$

Question 7B

How many three-point field goals did Marlene make in the game?

Question 8.

Which equation has the same solution as $x^2 - 6x - 12 = 0$?

(1) $(x + 3)^2 = 21$

(2) $(x - 3)^2 = 21$

(3) $(x + 3)^2 = 3$

(4) $(x - 3)^2 = 3$

Question 9.

Keith determines the zeros of the function $f(x)$ to be -6 and 5.
What could be Keith's function?

(1) $f(x) = (x + 5)(x + 6)$
(2) $f(x) = (x + 5)(x - 6)$
(3) $f(x) = (x - 5)(x + 6)$
(4) $f(x) = (x - 5)(x - 6)$

Question.10

Use the information provided to answer Part A and Part B for question 32.

Consider the function $f(x) = 2x^2 + 6x - 8$.

32. Part A

What is the vertex form of $f(x)$?

Ⓐ $f(x) = 2(x - 3)^2 - 4$

Ⓑ $f(x) = 2(x + 3)^2 - 4$

Ⓒ $f(x) = 2(x - 1.5)^2 - 12.5$

Ⓓ $f(x) = 2(x + 1.5)^2 - 12.5$

Part B

What is a factored form of $f(x)$?

Ⓐ $f(x) = (2x + 1)(x - 8)$

Ⓑ $f(x) = (2x - 1)(x + 8)$

Ⓒ $f(x) = 2(x + 4)(x - 1)$

Ⓓ $f(x) = 2(x - 4)(x + 1)$

Bonus Question

Question 11

Mathematics

11. A random sample of 200 teenagers participated in a taste test. Each teenager sampled four choices of fruit drink (labeled "A", "B", "C", and "D"), and then were asked to pick a favorite. The table shows the results of this taste test.

	A	B	C	D	Total
Boys	45	25	30	20	120
Girls	25	10	30	15	80
Total	70	35	60	35	200

Based on the information given, which of the given statements are true?

Select **all** that apply.

Ⓐ 40% of the participants were girls.

Ⓑ 70% of the participants preferred "A".

Ⓒ $\frac{20}{120}$ of the boys preferred "D".

Ⓓ $\frac{10}{35}$ of the participants who preferred "B" were girls.

Ⓔ The proportion of boys who preferred "C" is equal to the proportion of girls who preferred "C".