Quick Quiz 01242020

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

What is the value of x in the equation $\frac{x-2}{3} + \frac{1}{6} = \frac{5}{6}$?

(1) 4

(2) 6

(3) 8

(4) 11

Question 3.

In the equation $x^2 + 10x + 24 = (x + a)(x + b)$, b is an integer. Find algebraically *all* possible values of b.
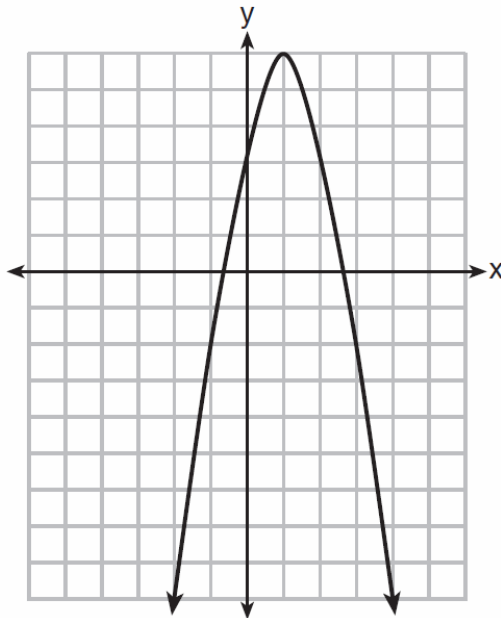
Question 4.

Guy and Jim work at a furniture store. Guy is paid $185 per week plus 3% of his total sales in dollars, x, which can be represented by $g(x) = 185 + 0.03x$. Jim is paid $275 per week plus 2.5% of his total sales in dollars, x, which can be represented by $f(x) = 275 + 0.025x$. Determine the value of x, in dollars, that will make their weekly pay the same.

Question 5.

Express the product of $2x^2 + 7x - 10$ and $x + 5$ in standard form.

Question 6.

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 7.

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 8.

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 9.

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

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

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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".