

Algebra 1 Quick-Quiz-02182025

Question 1.

The table below shows a relationship between x and y that is **not** a function.

x	y
3	6
4	6
5	7
5	8
6	10
10	9
11	11

Write one ordered pair that can be removed from the table to make the relationship between x and y a function.

Question 2

A student incorrectly solved an equation. The equation and the steps the student used to solve it are shown in this table.

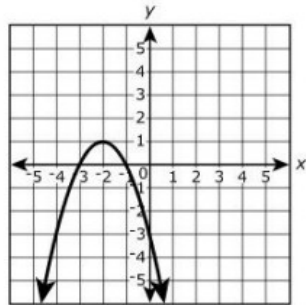
Equation	$-2(3x + 1) = 3x - 20$
Step 1	$-6x - 2 = 3x - 20$
Step 2	$-6x - 3x = -20 + 2$
Step 3	$-9x = -18$
Step 4	$x = -2$

In which step in the table does the student's error first appear?

- A. step 1
- B. step 2
- C. step 3
- D. step 4

Question 3.

The graph shows the function $y = g(x)$, where $g(x)$ represents a transformation of $f(x) = x^2$.



What is the equation for $g(x)$?

- A. $g(x) = (x - 2)^2 - 1$
- B. $g(x) = (x + 2)^2 - 1$
- C. $g(x) = -(x - 2)^2 + 1$
- D. $g(x) = -(x + 2)^2 + 1$

Question 4.

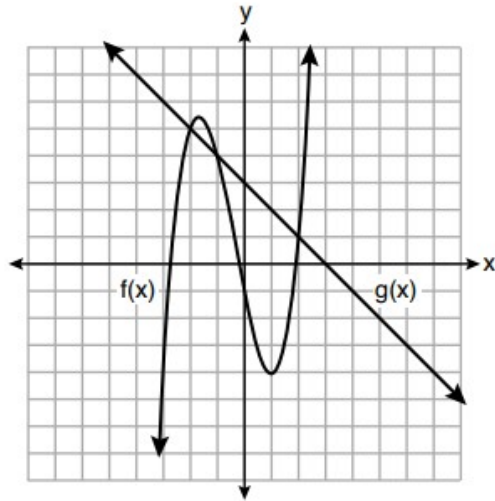
Identify an equivalent factored expression for each polynomial expression in the table.

Select an equivalent expression in each row.

Polynomial Expression	$(x + y)(x + y)$	$(x + y)(x - y)$	$(x - y)(x - y)$
$x^2 - y^2$	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
$x^2 - 2xy + y^2$	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
$x^2 + 2xy + y^2$	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question 5.

The functions $f(x)$ and $g(x)$ are graphed on the set of axes below.



For which value of x is $f(x) \neq g(x)$?

- (1) -1
- (2) 2
- (3) 3
- (4) -2

Question 6.

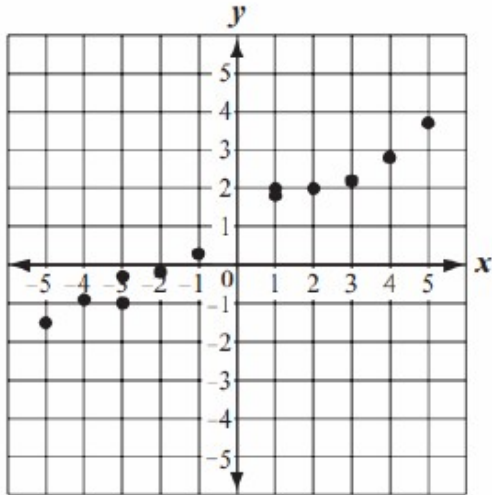
Which ordered pair is the solution of the system of equations below?

$$\begin{aligned}x + 2y &= 6 \\ 3x + 8y &= 4\end{aligned}$$

- A. $(2, 2)$
- B. $(4, 10)$
- C. $(10, -2)$
- D. $(20, -7)$

Question 7.

A set of data is shown in the scatterplot below.



Which of the following equations best represents the line of best fit for the data in the scatterplot?

A. $y = -\frac{1}{2}x - 2$

B. $y = -\frac{1}{2}x + 1$

C. $y = \frac{1}{2}x - 2$

D. $y = \frac{1}{2}x + 1$

Question 8.

Which statement is true about the equation below?

$$3(2 - k) = -3k + 2$$

- A. The equation has no solution.
- B. The equation has one solution.
- C. The equation has two solutions.
- D. The equation has infinitely many solutions.

Question 9.

For all non-zero values of x , which of the following expressions has a value of 1?

A. $\frac{4}{x} \cdot \left(\frac{-4}{x}\right)$

B. $\frac{4}{x} \cdot \left(\frac{1}{4x}\right)$

C. $\frac{4}{x} \cdot \left(\frac{-x}{4}\right)$

D. $\frac{4}{x} \cdot \left(\frac{x}{4}\right)$

Question.10

Joanna has a total of 50 coins in her purse.

- The coins are either nickels or quarters.
- The total value of the coins is \$7.10.

Which system of equations can be used to determine the number of nickels, n , and quarters, q , that Joanna has in her purse?

A $n + q = 50$ $0.05n + 0.25q = 7.10$	B $n + q = 7.10$ $50n + 50q = 7.10$
C $0.05n + 0.25q = 50$ $n + q = 7.10$	D $0.05n + 0.25q = 7.10$ $50n + 50q = 7.10$

Bonus Question

Question 11.A

Find the equation that is equivalent to the quadratic equation shown

$$x^2 - 6x - 27 = 0$$

- A. $x(x - 3) = 27$
- B. $(x - 6)^2 = 63$
- C. $(x - 3)^2 = 36$
- D. $(x - 3)^2 = 28$

Question 11.B

Elephant Population Estimates—Namibia

Combined estimates for Etosha National Park and the Northwestern Population

Year	Base Year	Estimated Number of Elephants
1998	3	3,218
2000	5	3,628
2002	7	3,721
2004	9	3,571

The elephant population in northwestern Namibia and Etosha National Park can be predicted by the expression $2,649(1.045)^b$, where b is the number of years since 1995.

What does the value 2,649 represent?

- A. the predicted increase in the number of elephants in the region each year
- B. the predicted number of elephants in the region in 1995
- C. the year when the elephant population is predicted to stop increasing
- D. the percentage the elephant population is predicted to increase each year