

Algebra 1 Quick-Quiz-03032025

Question 1

What is the correct factorization of  $x^2 + 4x - 12$ ?

- (1)  $(x + 3)(x - 4)$                       (3)  $(x + 2)(x - 6)$   
(2)  $(x - 3)(x + 4)$                       (4)  $(x - 2)(x + 6)$

Question 2

Which situation can be modeled by a linear function?

- (1) A printer can print one page every three seconds.  
(2) A bank account earns 0.5% interest each year, compounded annually.  
(3) The number of cells in an organism doubles every four days.  
(4) The attendance at a professional sports team's games decreases by 1.5% each year.

Question 3.

Which expression is equivalent to  $3(x^2 - 2x + 3) - (4x^2 + 3x - 1)$ ?

- (1)  $-x^2 + x + 2$                       (3)  $-x^2 - 3x + 8$   
(2)  $-x^2 - 8x + 7$                       (4)  $-x^2 - 9x + 10$

Question 4.

At Adelynn's first birthday party, each guest brought \$1 in coins for her piggy bank. Guests brought nickels, dimes, and quarters for a total of \$28. There were twice as many dimes as nickels and 12 more quarters than nickels. Which equation could be used to determine the number of nickels,  $x$ , that her guests brought to her party?

- (1)  $.05x + .10x + .25x = 28$   
(2)  $.05x + .10(2x) + .25(x + 12) = 28$   
(3)  $.05(2x) + .10x + .25(x + 12) = 28$   
(4)  $.05(x + 12) + .10(2x) + .25x = 28$

Question 5.

A student creates a fourth-degree trinomial with a leading coefficient of 2 and a constant value of 5. The trinomial could be

- (1)  $2x^4 + 3x^2 + 5$                       (3)  $4x^2 - 3x + 5$   
(2)  $2x^4 + 5x + 3$                       (4)  $4x^3 - 5x^2 + 3$

Question 6.

When solving the equation  $4x^2 - 16 = 0$ , Laura wrote  $4x^2 = 16$  as her first step. Which property justifies Laura's first step?

- (1) distributive property of multiplication over addition  
(2) multiplication property of equality  
(3) commutative property of addition  
(4) addition property of equality

Question 7.

Which expression results in an irrational number?

- (1)  $\sqrt{3} \cdot \sqrt{3}$                       (3)  $5 \cdot \sqrt{81}$   
(2)  $-\frac{2}{3} + \frac{1}{4}$                       (4)  $\frac{1}{3} + \sqrt{3}$

Question 8.

Which equation has the same solutions as  $x^2 + 6x - 18 = 0$ ?

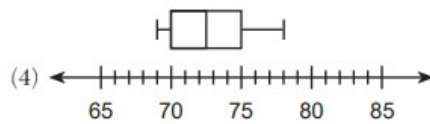
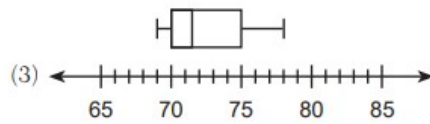
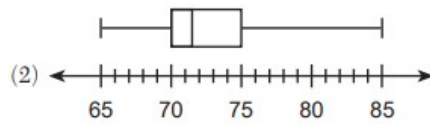
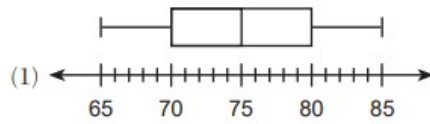
- (1)  $(x + 3)^2 = 24$                       (3)  $(x + 6)^2 = 24$   
(2)  $(x + 3)^2 = 27$                       (4)  $(x + 6)^2 = 27$

Question 9.

The heights, in inches, of eight football players are given below.

76, 70, 72, 70, 69, 71, 78, 74

Which box plot represents these data?



Question 10.

A bookstore owner recorded the number of books sold and the profit made selling the books.

Books Sold	Profit
100	\$50.00
250	\$275.00
300	\$350.00
350	\$425.00

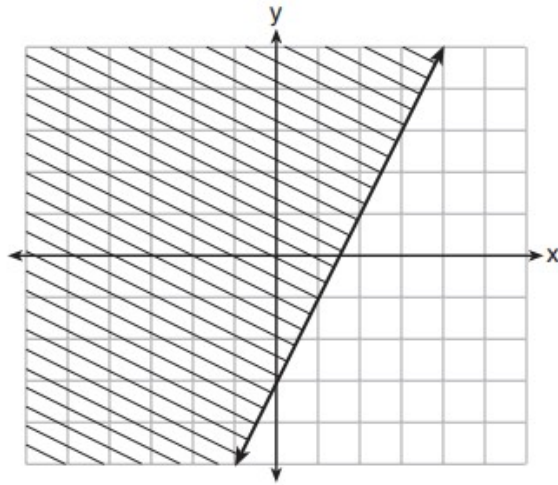
What is the average rate of change, in dollars per book, between 100 and 350 books sold?

- (1) 0.50                      (3) 1.50  
(2) 0.67                      (4) 2.00

Bonus Question

Question 11

The graph of an inequality is shown below.



a) Write the inequality represented by the graph.

b) On the same set of axes, graph the inequality  $x + 2y < 4$ .

c) The two inequalities graphed on the set of axes form a system. Oscar thinks that the point (2,1) is in the solution set for this system of inequalities. Determine and state whether you agree with Oscar. Explain your reasoning.