

Algebra Quick Quiz 11212019

Question 1.

Which of the following values of x is a solution of the equation below?

$$x^2 = 256$$

- A. -4
- B. -16
- C. 128
- D. 512

Question 2

Which of the following is equivalent to the expression below?

$$x^2 - 144$$

- A. $(x - 1)(x - 144)$
- B. $(x - 1)(x + 144)$
- C. $(x - 12)(x - 12)$
- D. $(x - 12)(x + 12)$

Question 3.

What is the value of the expression below?

$$-2(3^2 - 10)$$

Question 4

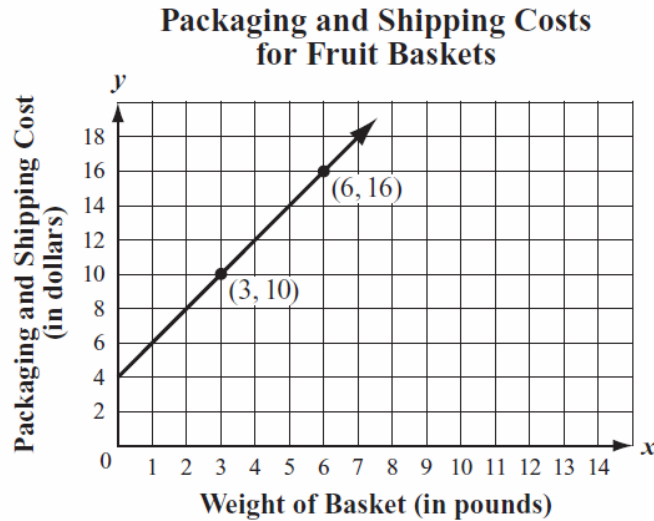
Lionel wrote an arithmetic sequence. The first five terms of the sequence are shown below.

$$3, 10, 17, 24, 31, \dots$$

- What is the next term of Lionel's sequence? Show or explain how you got your answer.
- Write an expression that can be used to find the n th term of Lionel's sequence.

Question 5.

A company packages fruit baskets of different weights and ships them to customers. The company charges a flat fee for packaging the baskets. The total packaging and shipping cost in dollars, y , of a fruit basket weighing x pounds is represented by the line on the graph below.



- What is the y -intercept of the line on the graph?
- What does the y -intercept of the line represent in this situation?

Question 6.

The first term of an arithmetic sequence is 5. The third term of the sequence is 13.

Which of the following expressions represents the n th term of the sequence?

- $4n + 1$
- $4n + 5$
- $5n + 1$
- $5n + 5$

Question 7.

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 8.

If $q \neq 0$, which of the following is the additive inverse of the expression below?

$$-\frac{2}{q}$$

A. $-2q$

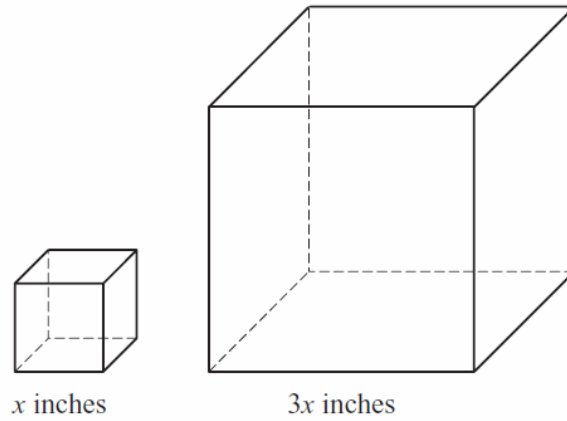
B. $-\frac{q}{2}$

C. $2q$

D. $\frac{2}{q}$

Question 9.

A small cube and a large cube with edge lengths represented by expressions are shown in the diagram below.

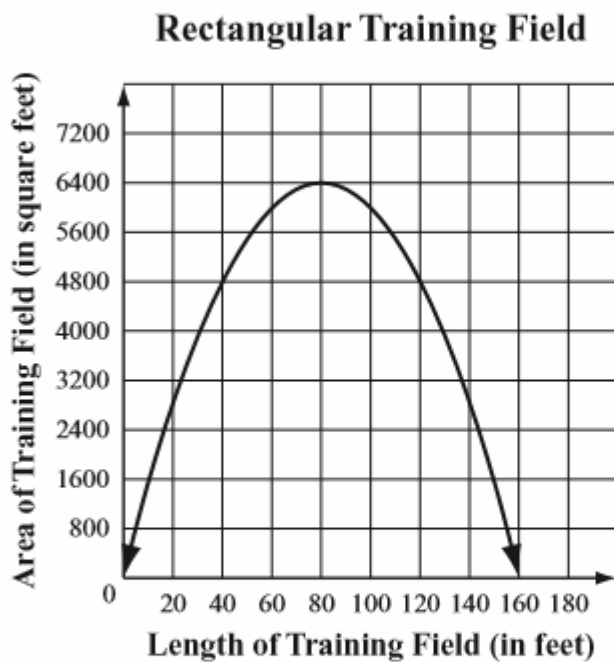


The small cube has a volume of 64 cubic inches.

- What is the value of x ? Show or explain how you got your answer.

Question 10.

- 40** A dog trainer will use 320 feet of fence to create a rectangular training field. The graph below displays the relationship between the length, in feet, of the training field and the area, in square feet, of the training field.



What is the length of the rectangular training field that has the greatest area?

- A. 40 feet
 - B. 80 feet
 - C. 160 feet
 - D. 180 feet
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Bonus

Question 11

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

Part A

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

- A. $f(x) = 2(x - 3)^2 - 4$
- B. $f(x) = 2(x + 3)^2 - 4$
- C. $f(x) = 2(x - 1.5)^2 - 12.5$
- D. $f(x) = 2(x + 1.5)^2 - 12.5$