

Algebra 1 Quick Quiz

September 12, 2023

Name.....Period.....

1. When $(x)(x - 5)(2x + 3)$ is expressed as a polynomial in standard form, which statement about the resulting polynomial is true?
- (1) The constant term is 2.
 - (2) The leading coefficient is 2.
 - (3) The degree is 2.
 - (4) The number of terms is 2.

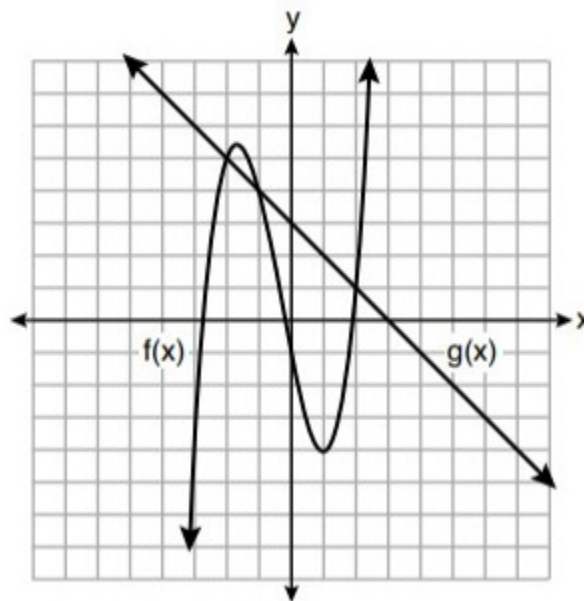
2.

The population of a city can be modeled by $P(t) = 3810(1.0005)^{7t}$, where $P(t)$ is the population after t years. Which function is approximately equivalent to $P(t)$?

- (1) $P(t) = 3810(0.1427)^t$
- (2) $P(t) = 3810(1.0035)^t$
- (3) $P(t) = 26,670(0.1427)^t$
- (4) $P(t) = 26,670(1.0035)^t$

3.

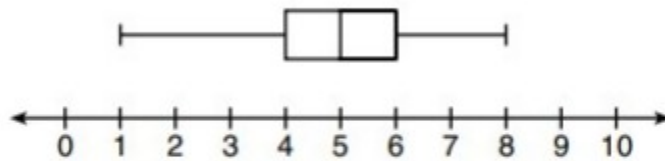
The functions $f(x)$ and $g(x)$ are graphed on the set of axes below.



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

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

4. What is the range of the box plot shown below?



- (1) 7
(2) 2
(3) 3
(4) 4
5. Which expression is *not* equivalent to $2x^2 + 10x + 12$?

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

6. The quadratic functions $r(x)$ and $q(x)$ are given below.

x	$r(x)$
-4	-12
-3	-15
-2	-16
-1	-15
0	-12
1	7

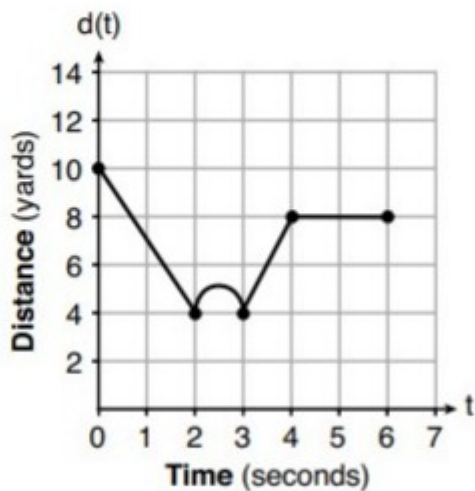
$$q(x) = x^2 + 2x - 8$$

The function with the *smallest* minimum value is

- (1) $q(x)$, and the value is -9
(2) $q(x)$, and the value is -1
(3) $r(x)$, and the value is -16
(4) $r(x)$, and the value is -2

7.

A child is playing outside. The graph below shows the child's distance, $d(t)$, in yards from home over a period of time, t , in seconds.



Which interval represents the child constantly moving closer to home?

(1) $0 \leq t \leq 2$

(3) $3 \leq t \leq 4$

(2) $2 \leq t \leq 3$

(4) $4 \leq t \leq 6$

8.

If $a_1 = 6$ and $a_n = 3 + 2(a_{n-1})^2$, then a_2 equals

(1) 75

(3) 180

(2) 147

(4) 900

9.

The length of a rectangular patio is 7 feet more than its width, w . The area of a patio, $A(w)$, can be represented by the function

(1) $A(w) = w + 7$

(3) $A(w) = 4w + 14$

(2) $A(w) = w^2 + 7w$

(4) $A(w) = 4w^2 + 28w$

10.

A dolphin jumps out of the water and then back into the water. His jump could be graphed on a set of axes where x represents time and y represents distance above or below sea level. The domain for this graph is best represented using a set of

(1) integers

(3) real numbers

(2) positive integers

(4) positive real numbers

BONUS

11.

Which system of linear equations has the same solution as the one shown below?

$$x - 4y = -10$$

$$x + y = 5$$

(1) $5x = 10$

(3) $-3x = -30$

$$x + y = 5$$

$$x + y = 5$$

(2) $-5y = -5$

(4) $-5y = -5$

$$x + y = 5$$

$$x - 4y = -10$$