Algebra 1 Quick Quiz

October 10, 2024

1

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

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

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

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

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

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.

3.

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

(1) $-x^2 + x + 2$

(2) $-x^2 - 8x + 7$

(3) $-x^2 - 3x + 8$

(4) $-x^2 - 9x + 10$

4.

Which function has a domain of all real numbers and a range greater than or equal to three?

(1) $f(x) = -x + 3$

(2) $g(x) = x^2 + 3$

(3) $h(x) = 3^x$

(4) $m(x) = |x + 3|$

5. Show you work for this question on the back of your answer sheet.

Given $g(x) = x^3 + 2x^2 - x$, evaluate $g(-3)$.

6.

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) $.05(x + 12) + .10(2x) + .25x = 28$

7.

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

8.

Which expression results in an irrational number?

(1) $\sqrt{3} \cdot \sqrt{3}$

(2) $-\frac{2}{3} + \frac{1}{4}$

(3) $5 \cdot \sqrt{81}$

(4) $\frac{1}{3} + \sqrt{3}$

9.

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

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

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

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

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

10.

Given the relation $R = \{(-1,1), (0,3), (-2,-4), (x,5)\}$.

State a value for x that will make this relation a function.

Explain why your answer makes this a function.

BONUS

11.

Factor $20x^3 - 45x$ completely.