

Algebra 2 quick quiz 01032023

Question 1.

$$8a^3 + c^3 =$$

A. $(2a - c)(4a^2 + 4ac + c^2)$

B. $(2a - c)(4a^2 + 2ac + c^2)$

C. $(2a + c)(4a^2 - 2ac + c^2)$

D. $(2a + c)(2a + c)(2a + c)$

Question 2

The total area of a rectangle is $4x^4 - 9y^2$.
Which factors could represent the length times width?

A. $(2x - 3y)(2x - 3y)$

B. $(2x^2 - 3y)(2x^2 + 3y)$

C. $(2x^2 + 3y)(2x^2 + 3y)$

D. $(2x + 3y)(2x - 3y)$

Question 3.

Which product of factors is equivalent to $(x + 1)^2 - y^2$?

A. $(x - 1 + y)(x - 1 - y)$

B. $(x + 1 + y)(x + 1 - y)$

C. $(x + 1 + y)^2$

D. $(x + 1 - y)^2$

Question 4.

Which expression shows the complete factorization of $12x^2 - 147$?

A. $3(2x - 7)(2x + 7)$

B. $(3x - 7)(4x + 2)$

C. $(4x - 21)(3x + 7)$

D. $12(x - 7)(x + 7)$

Question 5.

$$25x^2 - 40xy + 16y^2 =$$

A. $(5x + 10 - 4y)^3$

B. $5(5x - 4y)^2$

C. $5(4xy)^2$

D. $(5x - 4y)^2$

Question 6.

$$\frac{x + 3}{x + 5} + \frac{6}{x^2 + 3x - 10} =$$

A. $\frac{x^2 + x}{x^2 + 3x - 10}$

B. $\frac{3}{ab^3c^5}$

C. $\frac{7x - 9}{x^2 + 3x - 10}$

D. $\frac{x^2 + x + 12}{x^2 + 3x - 10}$

Question 7.

Which is a simplified form of $\frac{3a^2b^3c^{-2}}{(a^{-1}b^2c)^3}$?

A. $\frac{3ab}{c^5}$

B. $\frac{3}{b^2c^5}$

C. $\frac{3}{ab^3c^5}$

D. $\frac{3a^5}{b^3c^5}$

Question 8.

What is $\frac{20x^{-4}}{27y^2} \div \frac{8x^{-3}}{15y^{-5}}$?

A. $\frac{25y^3}{18x}$

B. $\frac{25}{18xy^7}$

C. $\frac{32y^3}{81x}$

D. $\frac{32}{81xy^7}$

Question 9.

Which product is equivalent to $\frac{4x^2 - 16}{2 - x}$?

A. $4(x - 2)$

B. $4(x + 2)$

C. $-4(x + 2)$

D. $-4(x - 2)$

Question 10.

$$\frac{x^2 + 4x}{x + 3} \cdot \frac{x^2 - 9}{x^2 + x - 12} =$$

A. $\frac{x + 3}{x - 3}$

B. x

C. $x + 4$

D. 1

Bonus Question

Question 11

Select **each** statement that is true about the graph of $f(x) = \sin(x + 3) - 2$.

- A.** amplitude: 1
- B.** amplitude: 2
- C.** midline: $y = 2$
- D.** y -intercept: $(0, -2)$
- E.** x -intercept: $(0, 0)$