

Algebra 2 Quick Quiz 11042022

Question 1.

If x is a real number, for what values of x is the equation $\frac{3x - 9}{3} = x - 3$ true?

- A all values of x
- B some values of x
- C no values of x
- D impossible to determine

Question 2

On a recent test, Jeremy wrote the equation

$$\frac{x^2 - 16}{x - 4} = x + 4.$$

Which of the following statements is correct about the equation

he wrote?

- A The equation is always true.
- B The equation is always true, except when $x = 4$.
- C The equation is never true.
- D The equation is sometimes true when $x = 4$.

Question 3.

If x is a real number, which *best* describes the values of x for which the inequality $\sqrt{x} > 0$ is true?

- A all $x > 0$
- B all $x \geq 0$
- C all values of x
- D no values of x

Question 4.

What is the n th term in the arithmetic series below?

$$3 + 7 + 11 + 15 + 19 \dots$$

- A $4n$
- B $3 + 4n$
- C $2n + 1$
- D $4n - 1$

Question 5.

Which expression represents $f(g(x))$
if $f(x) = x^2 - 1$ and $g(x) = x + 3$?

- A $x^3 + 3x^2 - x - 3$
- B $x^2 + 6x + 8$
- C $x^2 + x - 2$
- D $x^2 + 8$

Question 6.

Which is equivalent to $49^{\frac{3}{2}}$?

- A 21
- B 98
- C 294
- D 343

Question 7.

Which expression is another way to write $\sqrt[3]{125x^4}$?

- A $5x^{\frac{3}{4}}$
- B $5x^{\frac{4}{3}}$
- C $25x^{\frac{3}{4}}$
- D $25x^{\frac{4}{3}}$

Question 8.

What is the simplified expression of $\sqrt{\frac{36x^8}{4x^6}}$?

- A $3x$
- B $9x$
- C $3x^2$
- D $9x^2$

Question 9.

What is the simplified form of $(2\sqrt{5}+3)(\sqrt{5}-1)$?

- A $\sqrt{5}-3$
- B $\sqrt{5}+7$
- C $2\sqrt{5}-3$
- D $2\sqrt{5}+7$

Question 10.

What is the sum of $\frac{1}{3\sqrt{25}}$ and $\frac{1}{2^3\sqrt{27}}$?

- A $\frac{2}{21}$
- B $\frac{7}{30}$
- C $\frac{2}{33}$
- D $\frac{11}{90}$

Bonus Question

Question 11

Part A

Which expression is equivalent to $6x^3 - 5x^2y - 24xy^2 + 20y^3$?

- A.** $x^2(6x - 5y) + 4y^2(6x + 5y)$
- B.** $x^2(6x - 5y) + 4y^2(6x - 5y)$
- C.** $x^2(6x - 5y) - 4y^2(6x + 5y)$
- D.** $x^2(6x - 5y) - 4y^2(6x - 5y)$

Part B

Which expressions are factors of $6x^3 - 5x^2y - 24xy^2 + 20y^3$?

Select **all** that apply.

- A.** $x^2 + 4y^2$
- B.** $6x - 5y$
- C.** $x + 2y$
- D.** $6x + 5y$
- E.** $x - 2y$