

KING FAHD UNIVERSITY OF PETROLUUM AND MINERALS
Faculty of Science, Prep-Year Math Program
Math 001 - Term 041
QUIZ #3 (Chapter P)

Name: _____ **ID#:** _____ **Sr. #:** _____ **Section:** _____

SHOW ALL STEPS

Q1) One factor of $(x+3)^3 + 8$ is

- a) $x^2 + 4x - 7$
- b) $x^2 - 4x - 7$
- c) $x + 11$
- d) $x + 1$
- e) $x^2 - 4x + 7$

Q2) The expression $\frac{\frac{a}{b^2} - \frac{b}{a^2}}{\frac{1}{b} - \frac{1}{a}}$ simplifies to

- a) $\frac{a^2 - ab + b^2}{a^2 b^2}$
- b) $\frac{a^2 + ab + b^2}{ab}$
- c) $\frac{a^2 - ab + b^2}{a + b}$
- d) $\frac{a^2 - ab + b^2}{ab}$
- e) $\frac{a^2 + ab + b^2}{a + b}$

Q3) If x and y are nonnegative real numbers such that $\sqrt[3]{xy} \sqrt[5]{xy^2} = \sqrt[r]{x^m y^n}$, then
 $m + n + r =$

- a) 54
- b) 34
- c) 44
- d) 74
- e) 64

Q4) The expression $\frac{1}{4(2x^2 - x - 1)} - \frac{1}{6(x^2 - 1)}$ simplifies to

- a) $\frac{-1}{12(2x+1)(x+1)}$
- b) $\frac{1}{12(2x+1)(x+1)}$
- c) $\frac{-1}{12(x+1)(x-1)}$
- d) $\frac{1}{12(2x-1)(x+1)}$
- e) $\frac{-2x^2 + 4x - 2}{12(2x+1)(x+1)(x-1)}$

Q5) Which one of the following statements is **TRUE?**

- a) Every rational number is either even or odd.
- b) The product of two prime numbers is a prime number.
- c) The reciprocal of $-2\frac{3}{5}$ is $-\frac{13}{5}$.
- d) Every irrational numbers has a multiplicative inverse.
- e) The sum of two composite numbers is a composite number.

Q6) The property of real numbers illustrated in the statement $(4 + x) \cdot y = (x + 4) \cdot y$ is :

- a) the distributive property
- b) reflexive
- c) the associative property of addition
- d) the commutative property of multiplication
- e) the commutative property of addition

Q7) The expression $\frac{1}{\sqrt[3]{24}} - \frac{3}{\sqrt[3]{3}} + \frac{2}{\sqrt[3]{81}}$ simplifies to:

- a) $\frac{-13\sqrt[3]{9}}{18}$
- b) $\frac{-25\sqrt[3]{9}}{18}$
- c) $\frac{-17\sqrt[3]{9}}{18}$
- d) $\frac{-2\sqrt[3]{9}}{9}$
- e) $\frac{-5\sqrt[3]{9}}{9}$

Q8) Which one of the following is **FALSE**?

- a) $\sqrt{3}$ is a polynomial.
- b) $(2x+1)^3 - 8x^3$ is a polynomial of degree 2.
- c) The coefficient of x^2 for $(3x-5)^3$ is 135.
- d) the degree of the polynomial $-xy + 2x^2y^3 + (xy)^3 - 2$ is 5.
- e) $x^2 + 9 \neq (x+3)(x-3)$.

Q9) If $A = \left\{ -\sqrt{16}, -\frac{\pi}{2}, -\frac{3}{10}, 0.67, \sqrt{5}, 0, 1, 2, 3, -9, 51 \right\}$, then which **ONE** of the following is TRUE about A?

- a) A has 9 rational numbers, 2 irrational numbers, 2 primes, and 2 perfect square
- b) A has 8 rational numbers, 3 irrational numbers, 3 primes, and 2 perfect square
- c) A has 8 rational numbers, 3 irrational numbers, 3 primes, and 1 composite number
- d) A has 9 rational numbers, 2 irrational numbers, 2 primes, and 1 composite number
- e) A has 9 rational numbers, 2 irrational numbers, 3 primes, and 1 perfect square

Q10) If $1 < x < 2$, then $|5x - 3| - |x - 2|$ can be written without absolute value as:

- a) $-4x + 1$
- b) $-4x + 5$
- c) $5 - 6x$
- d) $6x - 5$
- e) $4x - 5$