

Pre-Algebra Core Concepts Challenge

Pre-Algebra · Answer Key · 7 Questions

1. Which fundamental property of numbers states that for any real numbers a , b , and c , $a(b + c) = ab + ac$?

- A) Commutative Property of Addition
- B) Associative Property of Multiplication
- C) Distributive Property**
- D) Identity Property of Multiplication

2. In the standard order of operations (PEMDAS/BODMAS), which operations are performed immediately after exponents/orders?

- A) Addition only
- B) Subtraction only
- C) Multiplication and Division (from left to right)**
- D) Parentheses/Brackets

3. What is the smallest set of numbers that contains both -5 and 2 ?

- A) Integers
- B) Rational Numbers
- C) Real Numbers**
- D) Whole Numbers

4. According to the rules of exponents, what is the equivalent expression for $(x^a)^b$?

- A) $x^{(a+b)}$
- B) $x^{(a-b)}$
- C) $x^{(a \cdot b)}$**
- D) $x^{(a/b)}$

5. For any real number x , what is the defined value of $|x|$ if $x < 0$?

- A) x
- B) $-x$**
- C) 0
- D) 1

6. What common fraction is equivalent to the repeating decimal $0.333\dots$?

- A) $1/4$
- B) $1/3$**
- C) $3/10$
- D) $1/2$

7. If two quantities x and y are directly proportional, which of the following statements about their relationship is always true?

- A) Their sum is constant
- B) Their product is constant
- C) Their ratio is constant**
- D) Their difference is constant