

Elementary Number Theory Challenge

Mathematics · Practice Test · 8 Questions

1. Which of the following is the definition of a 'perfect number'?

- A) A number equal to the sum of its proper divisors excluding itself
- B) A number that is the product of two distinct prime numbers
- C) A number whose digits add up to a multiple of 3
- D) A number that has exactly two factors

2. What is the smallest prime number that is also the sum of two consecutive prime numbers?

- A) 2
- B) 3
- C) 5
- D) 7

3. Which of these numbers is a 'composite number' that is not a 'square number'?

- A) 9
- B) 16
- C) 10
- D) 25

4. How many prime numbers exist between 1 and 20?

- A) 7
- B) 8
- C) 9
- D) 10

5. A 'Mersenne prime' is a prime number that can be expressed in which form (where n is an integer)?

- A) $n^2 + 1$
- B) $2^n - 1$
- C) $n^3 + 3$
- D) $2n + 1$

6. Which of the following statements about the number 1 is mathematically correct?

- A) It is a prime number
- B) It is a composite number
- C) It is neither prime nor composite
- D) It is an even number

7. What is the Greatest Common Divisor (GCD) of 24 and 36?

- A) 6
- B) 8
- C) 12
- D) 18

8. Which sequence represents the first four 'triangular numbers'?

- A) 1, 3, 6, 10
- B) 2, 4, 8, 16
- C) 1, 4, 9, 16
- D) 0, 1, 2, 3