Elementary Number Theory Challenge

Mathematics · Answer Key · 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

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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

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