Name _____

Unlocking the Secrets of Perfect Numbers and Mersenne Primes

Short Answer Key

1. A perfect number is a positive integer equal to the sum of its proper divisors, excluding itself. Example: 28.
2. A Mersenne prime is a prime number that can be expressed in the form 2^p - 1, where p is also a prime number.
3. Every even perfect number corresponds to a Mersenne prime through a formula discovered by Euclid.
4. Example: p = 3, Mersenne prime = 2^3 - 1 = 7, corresponding perfect number = 2^(3-1)(2^3 - 1) = 2^2 * 7 = 28.
5. Perfect numbers and Mersenne primes are important in number theory for their intriguing mathematical properties and connections.