

Practice Questions

GCD (Greatest Common Divisor)

Hard Level



Practice Questions

GCD (Greatest Common Divisor)

1. The GCD of two numbers is 36 and their LCM is 720. If one of the numbers is 180, what is the other number?
2. The GCD of two numbers is 20 and their LCM is 300. If one of the numbers is 60, what is the other number?
3. A farmer has two pieces of wire: one measuring 150 meters and the other 225 meters. What is the largest length of wire that can be cut from both pieces without any leftover?
4. The lengths of three different pieces of wood are in the ratio of 4:6:8. If the greatest common divisor of these lengths is 2 meters, what are the actual lengths of the pieces of wood? How does this GCD help in determining the minimum cutting length for uniform pieces?
5. Find the GCD of the polynomials $P(x) = 4x^4 + 8x^3 + 12x^2$ and $Q(x) = 2x^2 + 4x$.
6. Find the GCD of the polynomials $P(x) = 5x^5 - 15x^4 + 10x^3$ and $Q(x) = 10x^3 - 5x^2$.
7. Prove that the GCD of any two odd integers is always 1.
8. Find the GCD of 1000 and 250 using the Euclidean algorithm.

Answer Key

GCD (Greatest Common Divisor)

1. 144
2. 100
3. 75 meters
4. 8 meters, 12 meters, and 16 meters; the GCD helps by giving the minimum cutting length of 2 meters
5. $2x^2$
6. $5x^2$
7. 1
8. 250