

1. Apply the Euclidean algorithm and calculate

$$\gcd(26, 9)$$

$$\gcd(81, 18)$$

2. Express the following pairs of numbers in the form of Bezout identity

$$\alpha a + \beta b = \gcd(a, b) .$$

$$(60, 12)$$

$$(12, 18)$$

$$(26, 9)$$

3. Provide prime factorization of the following integers:

$$(a) \quad 64$$

$$(b) \quad 120$$

$$(c) \quad 375$$

$$(d) \quad 47$$

4. Calculate the Euler's function $\varphi(n)$ for the following n :

$$(a) \quad 64$$

$$(b) \quad 120$$

$$(c) \quad 375$$

$$(d) \quad 47$$