

Mathematics

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(Chapter – 1) (Real Numbers)(Exemplar Problems)
(Class – X)

Exercise 1.1

Choose the correct answer from the given four options in the following questions:

Question 4:

If the HCF of 65 and 117 is expressible in the form $65m - 117$, then the value of m is

- (A) 4 (B) 2 (C) 1 (D) 3

Answer 4:

- (B) 2

Solution:

Using Euclid's division algorithm,

$$b = aq + r, \quad 0 \leq r < a \quad [\because \text{dividend} = \text{divisor} \times \text{quotient} + \text{remainder}]$$

$$\Rightarrow 117 = 65 \times 1 + 52$$

$$\Rightarrow 65 = 52 \times 1 + 13$$

$$\Rightarrow 52 = 13 \times 4 + 0$$

$$\therefore \text{HCF}(65, 117) = 13 \quad \dots (i)$$

$$\text{Also, given that, HCF}(65, 117) = 65m - 117 \quad \dots (ii)$$

From Equations (i) and (ii), we get

$$65m - 117 = 13$$

$$\Rightarrow 65m = 130$$

$$\Rightarrow m = 2$$

