

Mathematics

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

Exercise 1.3

Question 8:

Use Euclid's division algorithm to find HCF of 441, 567 and 693.

Answer 8:

Let $a = 693$, $b = 567$ and $c = 441$

By Euclid's division algorithms,

$$a = bq + r, \text{ where } 0 \leq r < b$$

[∴ dividend = divisor × quotient + remainder]

First we take, $a = 693$ and $b = 567$ and find their HCF.

Using Euclid's division algorithm,

$$693 = 567 \times 1 + 126 \quad [\because r \neq 0]$$

$$567 = 126 \times 4 + 63 \quad [\because r \neq 0]$$

$$126 = 63 \times 2 + 0$$

[Now $r = 0$]

$$\therefore \text{HCF} (693, 567) = 63$$

Now, we take $c = 441$ and say $d = 63$, then find their HCF.

Again using Euclid's division algorithm,

$$c = dq + r, 0 \leq r < d$$

$$\Rightarrow 441 = 63 \times 7 + 0$$

[Now $r = 0$]

$$\therefore \text{HCF} (693, 567, 441) = 63$$

