STD - 10

MATHS

CHAPTER - 1

REAL NUMBER

EXERCISE - 1.1 Q-2 Q-3

- (2) Show that any positive odd integer is of the form 6q + 1, or 6q + 3, or 6q + 5, where q is some integer.
- Let a be any positive integer and b = 6. Then, by Euclid's algorithm, a = 6q + r, for some integer q ≥ 0, and r = 0, 1, 2, 3, 4, 5, because 0 ≤ r < 6.</p>
- Now substituting the value of r, we get,
 If r = 0, then a = 6q

- Similarly, for r = 1, 2, 3, 4 and 5, the value of a is 6q + 1, 6q + 2, 6q + 3, 6q + 4 and 6q + 5, respectively.
- ➤ If a = 6q, 6q + 2, 6q + 4, then a is an even number and divisible by 2. A positive integer can be either even or odd Therefore, any positive odd integer is of the form of 6q + 1, 6q + 3 and 6q + 5, where q is some integer.

- 3. An army contingent of 616 members is to march behind an army band of 32 members in a parade. The two groups are to march in the same number of columns. What is the maximum number of columns in which they can march?
- Given

Number of army contingent members = 616 Number of army band members = 32

- ➤ If the two groups have to march in the same column, we have to find out the highest common factor between the two groups. HCF (616, 32), gives the maximum number of columns in which they can march.
- ➤ By Using Euclid's algorithm to find their HCF, we get, Since, 616 > 32, therefore,
- > a = 616
- \triangleright b = 32

$$r = 8$$

$$616 = 32 \times 19 + 8$$

Since, 8 ≠ 0 therefore, taking 32 as new dividend and 8 as new divisor we have,

$$a = 32$$
 $b = 8$
 $8\sqrt{32}$
 32

So that

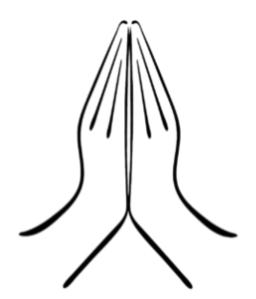
$$q = 4$$

$$r = 0$$

$$32 = 8 \times 4 + 0$$

- ➤ Now we have got remainder as 0, therefore, HCF (616, 32) = 8.
- ➤ Hence, the maximum number of columns in which they can march is 8.

Thanks



For watching