

Mathematics

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(Chapter – 2) (Polynomials)(Exemplar Problems)

(Class – IX)

Exercise 2.1

Write the correct answer in each of the following:

Question 19:

If $\frac{x}{y} + \frac{y}{x} = -1$ ($x, y \neq 0$), the value of $x^3 - y^3$ is

- (A) 1 (B) -1 (C) 0 (D) $\frac{1}{2}$

Answer 19:

- (C) 0

Solution:

$$\text{Given that: } \frac{x}{y} + \frac{y}{x} = -1$$

$$\Rightarrow \frac{x^2 + y^2}{xy} = -1$$

$$\Rightarrow x^2 + y^2 = -xy$$

$$\Rightarrow x^2 + y^2 + xy = 0$$



Now,

$$x^3 - y^3$$

$$= (x - y)(x^2 + y^2 + xy)$$

$$[\because a^3 - b^3 = (a - b)(a^2 + ab + b^2)]$$

$$= (x - y)(0)$$

$$= 0$$

Hence, the option (C) is correct.

