

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 21:

If $a + b + c = 0$, then $a^3 + b^3 + c^3$ is equal to

(A) 0 (B) abc (C) $3abc$ (D) $2abc$

Answer 21:

(C) $3abc$

Solution:

We know that:

$$a^3 + b^3 + c^3 - 3abc = (a + b + c)(a^2 + b^2 + c^2 - ab - bc - ca)$$

If $a + b + c = 0$, then we have

$$a^3 + b^3 + c^3 - 3abc = (0)(a^2 + b^2 + c^2 - ab - bc - ca)$$

$$\Rightarrow a^3 + b^3 + c^3 - 3abc = 0$$

$$\Rightarrow a^3 + b^3 + c^3 = 3abc$$



Hence, the option (C) is correct.

