

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 17:

Which of the following is a factor of $(x + y)^3 - (x^3 + y^3)$?

(A) $x^2 + y^2 + 2xy$

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

(C) xy^2

(D) $3xy$

Answer 17:

(D) $3xy$

Solution:

Given Polynomial: $(x + y)^3 - (x^3 + y^3)$

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

$$= 3x^2y + 3xy^2$$

$$= 3xy(x + y)$$

$\Rightarrow 3xy$ and $(x + y)$ are factors of given polynomial.

Hence, the option (D) is correct.

