



Algebraic Expressions and Identities Ex 6.3 Q1

Answer :

To multiply algebraic expressions, we use commutative and associative laws along with the laws of indices. However, use of these laws are subject to their applicability in the given expressions.

In the present problem, to perform the multiplication, we can proceed as follows:

$$\begin{aligned} & 5x^2 \times 4x^3 \\ &= (5 \times 4) \times (x^2 \times x^3) \\ &= 20x^5 \quad (\because a^m \times a^n = a^{m+n}) \end{aligned}$$

Thus, the answer is $20x^5$.

Algebraic Expressions and Identities Ex 6.3 Q2

Answer :

To multiply algebraic expressions, we can use commutative and associative laws along with the law of indices, $a^m \times a^n = a^{m+n}$, wherever applicable.

We have:

$$\begin{aligned} & -3a^2 \times 4b^4 \\ &= (-3 \times 4) \times (a^2 \times b^4) \\ &= -12a^2b^4 \end{aligned}$$

Thus, the answer is $-12a^2b^4$.

Algebraic Expressions and Identities Ex 6.3 Q3

Answer :

To multiply algebraic expressions, we use commutative and associative laws along with the law of indices, $a^m \times a^n = a^{m+n}$, wherever applicable.

We have:

$$(-5xy) \times (-3x^2yz) = \{(-5) \times (-3)\} \times (x \times x^2) \times (y \times y) \times z = 15 \times (x^{1+2}) \times (y^{1+1}) \times z = 15x^3y^2z$$

Thus, the answer is $15x^3y^2z$.

Algebraic Expressions and Identities Ex 6.3 Q4

Answer :

To multiply algebraic expressions, we use commutative and associative laws along with the the law of indices, that is, $a^m \times a^n = a^{m+n}$.

We have:

$$\frac{1}{4}xy \times \frac{2}{3}x^2yz^2 = \left(\frac{1}{4} \times \frac{2}{3}\right) \times (x \times x^2) \times (y \times y) \times z^2 = \left(\frac{1}{4} \times \frac{2}{3}\right) \times (x^{1+2}) \times (y^{1+1}) \times z^2 = \frac{1}{6}x^3y^2z^2$$

Thus, the answer is $\frac{1}{6}x^3y^2z^2$.

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