

Algebraic Expressions and Identities Ex 6.3 Q25

Answer:

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

We have:

$$(2. 3a^{5}b^{2}) \times (1. 2a^{2}b^{2})$$

$$= (2. 3 \times 1. 2) \times (a^{5} \times a^{2}) \times (b^{2} \times b^{2})$$

$$= (2. 3 \times 1. 2) \times (a^{5+2}) \times (b^{2+2})$$

$$= 2. 76a^{7}b^{4}$$

$$\therefore (2. 3a^{5}b^{2}) \times (1. 2a^{2}b^{2}) = 2. 76a^{7}b^{4}$$

Substituting a = 1 and b = 0.5 in the result, we get:

$$2.76a^{7}b^{4}$$
= 2.76(1)⁷(0.5)⁴
= 2.76 × 1 × 0.0625
= 0.1725

Thus, the answer is 0. 1725.

Algebraic Expressions and Identities Ex 6.3 Q26 Answer:

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

We have:

$$\begin{aligned} & \left(-8x^2y^6 \right) \times (-20xy) \\ & = \left\{ (-8) \times (-20) \right\} \times \left(x^2 \times x \right) \times \left(y^6 \times y \right) \\ & = \left\{ (-8) \times (-20) \right\} \times \left(x^{2+1} \right) \times \left(y^{6+1} \right) \\ & = 160x^3y^7 \end{aligned}$$

$$(-8x^2y^6) \times (-20xy) = 160x^3y^7$$

Substituting x = 2.5 and y = 1 in the result, we get:

$$160x^{3}y^{7}$$
= 160(2.5)³(1)⁷
= 160 × 15.625
= 2500

Thus, the answer is 2500.

Algebraic Expressions and Identities Ex 6.3 Q27

Answer:

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

We have:

$$\begin{aligned} & \left(-xy^3 \right) \times \left(yx^3 \right) \times \left(xy \right) \\ & = \left(-1 \right) \times \left(x \times x^3 \times x \right) \times \left(y^3 \times y \times y \right) \\ & = \left(-1 \right) \times \left(x^{1+3+1} \right) \times \left(y^{3+1+1} \right) \\ & = -x^5 y^5 \end{aligned}$$

To verify the result, we substitute x = 1 and y = 2 in LHS; we get:

LHS =
$$(-xy^3) \times (yx^3) \times (xy)$$

= $\{(-1) \times 1 \times 2^3\} \times (2 \times 1^3) \times (1 \times 2)$
= $\{(-1) \times 1 \times 8\} \times (2 \times 1) \times 2$
= $(-8) \times 2 \times 2$
= -32

Substituting x = 1 and y = 2 in RHS, we get:

RHS =
$$-x^5y^5$$

= $(-1)(1)^5(2)^5$
= $(-1) \times 1 \times 32$
= -32

Because LHS is equal to RHS, the result is correct.

Thus, the answer is $-x^5y^5$.

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