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:

$$\left(2.3a^5b^2\right) \times \left(1.2a^2b^2\right)$$
$$= (2.3 \times 1.2) \times \left(a^5 \times a^2\right) \times \left(b^2 \times b^2\right)$$
$$= (2.3 \times 1.2) \times \left(a^{5+2}\right) \times \left(b^{2+2}\right)$$
$$= 2.76a^7b^4$$

$$\therefore \left(2.3a^5b^2\right) \times \left(1.2a^2b^2\right) = 2.76a^7b^4$$

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

$$2.76a^7b^4$$
$$= 2.76(1)^7(0.5)^4$$
$$= 2.76 \times 1 \times 0.0625$$
$$= 0.1725$$

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:

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

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

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

$$160x^3y^7$$
$$= 160(2.5)^3(1)^7$$
$$= 160 \times 15.625$$
$$= 2500$$

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:

$(-xy^3) \times (yx^3) \times (xy)$
$= (-1) \times (x \times x^3 \times x) \times (y^3 \times y \times y)$
$= (-1) \times (x^{1+3+1}) \times (y^{3+1+1})$
$= -x^5 y^5$

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

$\text{LHS} = (-xy^3) \times (yx^3) \times (xy)$
$= \{(-1) \times 1 \times 2^3\} \times (2 \times 1^3) \times (1 \times 2)$
$= \{(-1) \times 1 \times 8\} \times (2 \times 1) \times 2$
$= (-8) \times 2 \times 2$
$= -32$

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

$$\text{RHS} = -x^5 y^5$$
$$= (-1)(1)^5 (2)^5$$
$$= (-1) \times 1 \times 32$$
$$= -32$$

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

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

********** END *********