Algebraic Expressions and Identities Ex 6.3 Q22

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:

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

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

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

$$\text{LHS} = (-8x^2y^6) \times (-20xy)$$
$$= \left\{-8(2.5)^2(1)^6\right\} \times \{-20(2.5)(1)\}$$
$$= \{-8(6.25)(1)\} \times \{-20(2.5)(1)\}$$
$$= (-50) \times (-50)$$
$$= 2500$$

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

$$\text{RHS} = -160x^3y^7$$
$$= -160(2.5)^3(1)^7$$
$$= -160(15.625) \times 1$$
$$= -2500$$

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

Thus, the answer is $-160x^3y^7$.

Algebraic Expressions and Identities Ex 6.3 Q23

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:

$$(3.2x^6y^3) \times (2.1x^2y^2)$$
$$= (3.2 \times 2.1) \times (x^6 \times x^2) \times (y^3 \times y^2)$$
$$= (3.2 \times 2.1) \times (x^{6+2}) \times (y^{3+2})$$
$$= 6.72x^8y^5$$

$$\therefore (3.2x^6y^3) \times (2.1x^2y^2) = 6.72x^8y^5$$

Substituting $x = 1$ and $y = 0.5$ in the result, we get:

$$6.72x^8y^5$$
$$= 6.72(1)^8(0.5)^5$$
$$= 6.72 \times 1 \times 0.03125$$
$$= 0.21$$

Thus, the answer is 0.21.

Algebraic Expressions and Identities Ex 6.3 Q24

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:

$$(5x^6) \times (-1.5x^2y^3) \times (-12xy^2)$$
$$= \{5 \times (-1.5) \times (-12)\} \times (x^6 \times x^2 \times x) \times (y^3 \times y^2)$$
$$= \{5 \times (-1.5) \times (-12)\} \times (x^{6+2+1}) \times (y^{3+2})$$
$$= 90x^9y^5$$

$$\therefore (5x^6) \times (-1.5x^2y^3) \times (-12xy^2) = 90x^9y^5$$

Substituting $x = 1$ and $y = 0.5$ in the result, we get:

$$90x^9y^5$$
$$= 90(1)^9(0.5)^5$$
$$= 90 \times 1 \times 0.03125$$
$$= 2.8125$$

Thus, the answer is 2.8125.

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