



### 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:

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

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

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

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

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

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

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:

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

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

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

$$\begin{aligned}6.72x^8y^5 \\&= 6.72(1)^8(0.5)^5 \\&= 6.72 \times 1 \times 0.03125 \\&= 0.21\end{aligned}$$

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:

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

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

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

$$\begin{aligned}90x^9y^5 \\&= 90(1)^9(0.5)^5 \\&= 90 \times 1 \times 0.03125 \\&= 2.8125\end{aligned}$$

Thus, the answer is 2.8125.

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