



Algebraic Expressions and Identities Ex 6.4 Q9

Answer :

To find the product, we will use the distributive law in the following way:

$$\begin{aligned}
 & -\frac{8}{27}xyz\left(\frac{3}{2}xyz^2 - \frac{9}{4}xy^2z^3\right) \\
 & = \left\{\left(-\frac{8}{27}xyz\right)\left(\frac{3}{2}xyz^2\right)\right\} - \left\{\left(-\frac{8}{27}xyz\right)\left(\frac{9}{4}xy^2z^3\right)\right\} \\
 & = \left\{\left(-\frac{8}{27} \times \frac{3}{2}\right)(x \times x) \times (y \times y) \times (z \times z^2)\right\} \\
 & - \left\{\left(-\frac{8}{27} \times \frac{9}{4}\right)(x \times x) \times (y \times y^2) \times (z \times z^3)\right\} \\
 & = \left\{\left(-\frac{8}{27} \times \frac{3}{2}\right)(x^{1+1}y^{1+1}z^{1+2})\right\} - \left\{\left(-\frac{8}{27} \times \frac{9}{4}\right)(x^{1+1}y^{1+2}z^{1+3})\right\} \\
 & = \left\{\left(-\frac{\cancel{8}^4}{\cancel{27}_9} \times \frac{\cancel{3}}{\cancel{2}}\right)(x^{1+1}y^{1+1}z^{1+2})\right\} - \left\{\left(-\frac{\cancel{8}^2}{\cancel{27}_9} \times \frac{\cancel{9}}{\cancel{4}}\right)(x^{1+1}y^{1+2}z^{1+3})\right\} \\
 & = -\frac{4}{9}x^2y^2z^3 + \frac{2}{3}x^2y^3z^4
 \end{aligned}$$

Thus, the answer is $-\frac{4}{9}x^2y^2z^3 + \frac{2}{3}x^2y^3z^4$.

Algebraic Expressions and Identities Ex 6.4 Q10

Answer :

To find the product, we will use distributive law as follows:

$$\begin{aligned}
 & -\frac{4}{27}xyz\left(\frac{9}{2}x^2yz - \frac{3}{4}xyz^2\right) \\
 & = \left\{\left(-\frac{4}{27}xyz\right)\left(\frac{9}{2}x^2yz\right)\right\} - \left\{\left(-\frac{4}{27}xyz\right)\left(\frac{3}{4}xyz^2\right)\right\} \\
 & = \left\{\left(-\frac{4}{27} \times \frac{9}{2}\right)(x^{1+2}y^{1+1}z^{1+1})\right\} - \left\{\left(-\frac{4}{27} \times \frac{3}{4}\right)(x^{1+1}y^{1+1}z^{1+2})\right\} \\
 & = \left\{\left(-\frac{\cancel{4}^2}{\cancel{27}_9} \times \frac{\cancel{9}}{\cancel{2}}\right)(x^{1+2}y^{1+1}z^{1+1})\right\} - \left\{\left(-\frac{\cancel{4}^1}{\cancel{27}_9} \times \frac{\cancel{3}}{\cancel{4}}\right)(x^{1+1}y^{1+1}z^{1+2})\right\} \\
 & = -\frac{2}{3}x^3y^2z^3 + \frac{1}{9}x^2y^2z^3
 \end{aligned}$$

Thus, the answer is $-\frac{2}{3}x^3y^2z^3 + \frac{1}{9}x^2y^2z^3$.

Algebraic Expressions and Identities Ex 6.4 Q11

Answer :

To find the product, we will use distributive law as follows:

$$\begin{aligned}
 & 1.5x(10x^2y - 100xy^2) \\
 & = (1.5x \times 10x^2y) - (1.5x \times 100xy^2) \\
 & = (15x^{1+2}y) - (150x^{1+1}y^2) \\
 & = 15x^3y - 150x^2y^2
 \end{aligned}$$

Thus, the answer is $15x^3y - 150x^2y^2$.

Algebraic Expressions and Identities Ex 6.4 Q12

Answer :

To find the product, we will use distributive law as follows:

$$\begin{aligned} & 4.1xy(1.1x - y) \\ &= (4.1xy \times 1.1x) - (4.1xy \times y) \\ &= \{(4.1 \times 1.1) \times xy \times x\} - (4.1xy \times y) \\ &= (4.51x^{1+1}y) - (4.1xy^{1+1}) \\ &= 4.51x^2y - 4.1xy^2 \end{aligned}$$

Thus, the answer is $4.51x^2y - 4.1xy^2$.

Algebraic Expressions and Identities Ex 6.4 Q13

Answer :

To find the product, we will use distributive law as follows:

$$\begin{aligned} & 250.5xy\left(xz + \frac{y}{10}\right) \\ &= 250.5xy \times xz + 250.5xy \times \frac{y}{10} \\ &= 250.5x^{1+1}yz + 25.05xy^{1+1} \\ &= 250.5x^2yz + 25.05xy^2 \end{aligned}$$

Thus, the answer is $250.5x^2yz + 25.05xy^2$.

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