Algebraic Expressions and Identities Ex 6.4 Q9

Answer :

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

$$-\frac{8}{27}\,xyz\left(\frac{3}{2}\,xyz^2 - \frac{9}{4}\,xy^2z^3\right)$$

$$= \left\{\left(-\frac{8}{27}\,xyz\right)\left(\frac{3}{2}\,xyz^2\right)\right\} - \left\{\left(-\frac{8}{27}\,xyz\right)\left(\frac{9}{4}\,xy^2z^3\right)\right\}$$

$$= \left\{\left(-\frac{8}{27}\times\frac{3}{2}\right)(x\times x)\times(y\times y)\times(z\times z^2)\right\}$$
$$- \left\{\left(-\frac{8}{27}\times\frac{9}{4}\right)(x\times x)\times(y\times y^2)\times(z\times z^3)\right\}$$

$$= \left\{\left(-\frac{8}{27}\times\frac{3}{2}\right)\left(x^{1+1}y^{1+1}z^{1+2}\right)\right\} - \left\{\left(-\frac{8}{27}\times\frac{9}{4}\right)\left(x^{1+1}y^{1+2}z^{1+3}\right)\right\}$$

$$= \left\{\left(-\frac{\cancel{8}^4}{\cancel{27}_9}\times\frac{\cancel{3}}{\cancel{2}}\right)\left(x^{1+1}y^{1+1}z^{1+2}\right)\right\} - \left\{\left(-\frac{\cancel{8}^2}{\cancel{27}_3}\times\frac{\cancel{9}}{\cancel{4}}\right)\left(x^{1+1}y^{1+2}z^{1+3}\right)\right\}$$

$$= -\frac{4}{9}\,x^2y^2z^3 + \frac{2}{3}\,x^2y^3z^4$$

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:

$$-\frac{4}{27}\,xyz\left(\frac{9}{2}\,x^2yz - \frac{3}{4}\,xyz^2\right)$$

$$= \left\{\left(-\frac{4}{27}\,xyz\right)\left(\frac{9}{2}\,x^2yz\right)\right\} - \left\{\left(-\frac{4}{27}\,xyz\right)\left(\frac{3}{4}\,xyz^2\right)\right\}$$

$$= \left\{\left(-\frac{4}{27}\times\frac{9}{2}\right)\left(x^{1+2}y^{1+1}z^{1+1}\right)\right\} - \left\{\left(-\frac{4}{27}\times\frac{3}{4}\right)\left(x^{1+1}y^{1+1}z^{1+2}\right)\right\}$$

$$= \left\{\left(-\frac{\cancel{4}^2}{\cancel{27}_3}\times\frac{\cancel{9}}{\cancel{2}}\right)\left(x^{1+2}y^{1+1}z^{1+1}\right)\right\} - \left\{\left(-\frac{\cancel{4}^1}{\cancel{27}_9}\times\frac{\cancel{3}}{\cancel{4}}\right)\left(x^{1+1}y^{1+1}z^{1+2}\right)\right\}$$

$$= -\frac{2}{3}\,x^3y^2z^2 + \frac{1}{9}\,x^2y^2z^3$$

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

Algebraic Expressions and Identities Ex 6.4 Q11

Answer :

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

$$1.5x\left(10x^2y - 100xy^2\right)$$

$$= \left(1.5x\times 10x^2y\right) - \left(1.5x\times 100xy^2\right)$$

$$= \left(15x^{1+2}y\right) - \left(150x^{1+1}y^2\right)$$

$$= 15x^3y - 150x^2y^2$$

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:

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

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:

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

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

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