Algebraic Expressions and Identities Ex 6.4 Q14

Answer :

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

$$\frac{7}{5}\,x^2 y\left(\frac{3}{5}\,xy^2 + \frac{2}{5}\,x\right)$$

$$= \frac{7}{5}\,x^2 y \times \frac{3}{5}\,xy^2 + \frac{7}{5}\,x^2 y \times \frac{2}{5}\,x$$

$$= \frac{21}{25}\,x^{2+1}y^{1+2} + \frac{14}{25}\,x^{2+1}y$$

$$= \frac{21}{25}\,x^3 y^3 + \frac{14}{25}\,x^3 y$$

Thus, the answer is $\frac{21}{25}\,x^3 y^3 + \frac{14}{25}\,x^3 y$.

Algebraic Expressions and Identities Ex 6.4 Q15

Answer :

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

$$\frac{4}{3}\,a\left(a^2 + b^2 - 3c^2\right)$$

$$= \frac{4}{3}\,a \times a^2 + \frac{4}{3}\,a \times b^2 - \frac{4}{3}\,a \times 3c^2$$

$$= \frac{4}{3}\,a^{1+2} + \frac{4}{3}\,ab^2 - 4ac^2$$

$$= \frac{4}{3}\,a^3 + \frac{4}{3}\,ab^2 - 4ac^2$$

Thus, the answer is $\frac{4}{3}\,a^3 + \frac{4}{3}\,ab^2 - 4ac^2$.

Algebraic Expressions and Identities Ex 6.4 Q16

Answer :

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

$24x^2(1-2x)$
$= 24x^2 \times 1 - 24x^2 \times 2x$
$= 24x^2 - 48x^{1+2}$
$= 24x^2 - 48x^3$

Substituting $x = 3$ in the result, we get:

$24x^2 - 48x^3$
$= 24(3)^2 - 48(3)^3$
$= 24 \times 9 - 48 \times 27$
$= 216 - 1296$
$= -1080$

Thus, the product is $(24x^2 - 48x^3)$ **and its value for** $x = 3$ **is** (-1080).

Algebraic Expressions and Identities Ex 6.4 Q17

Answer :

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

$-3y(xy + y^2)$
$= -3y \times xy + (-3y) \times y^2$
$= -3xy^{1+1} - 3y^{1+2}$
$= -3xy^2 - 3y^3$

Substituting $x = 4$ and $y = 5$ in the result, we get:

$-3xy^2 - 3y^3$
$= -3(4)(5)^2 - 3(5)^3$
$= -3(4)(25) - 3(125)$
$= -300 - 375$
$= -675$

Thus, the product is $(-3xy^2 - 3y^3)$, and its value for $x = 4$ and $y = 5$ is (-675).

Algebraic Expressions and Identities Ex 6.4 Q18

Answer :

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

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

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

$-3x^3y^3 + \frac{3}{2}x^2y^4$
$= -3(1)^3(2)^3 + \frac{3}{2}(1)^2(2)^4$
$= -3 \times 1 \times 8 + \frac{3}{2} \times 1 \times 16$
$= -24 + 24$
$= 0$

Thus, the product is $-3x^3y^3 + \frac{3}{2}x^2y^4$, and its value for $x = 1$ and $y = 2$ is 0.

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