Algebraic Expressions and Identities Ex 6.4 Q5

Answer :

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

$$\begin{aligned}&\frac{6x}{5}\left(x^3+y^3\right)\\&=\frac{6x}{5}\times x^3+\frac{6x}{5}\times y^3\\&=\frac{6}{5}\times\left(x\times x^3\right)+\frac{6}{5}\times\left(x\times y^3\right)\\&=\frac{6}{5}\times\left(x^{1+3}\right)+\frac{6}{5}\times\left(x\times y^3\right)\\&=\frac{6x^4}{5}+\frac{6xy^3}{5}\end{aligned}$$

Thus, the answer is $\frac{6x^4}{5}+\frac{6xy^3}{5}$.

Algebraic Expressions and Identities Ex 6.4 Q6

Answer :

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

$$\begin{aligned}&xy\left(x^3-y^3\right)\\&=xy\times x^3-xy\times y^3\\&=\left(x\times x^3\right)\times y-x\times\left(y\times y^3\right)\\&=x^{1+3}y-xy^{1+3}\\&=x^4y-xy^4\end{aligned}$$

Thus, the answer is x^4y-xy^4.

Algebraic Expressions and Identities Ex 6.4 Q7

Answer :

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

$$
\begin{aligned}
&0.1y(0.1x^5+0.1y)\\
&=(0.1y)(0.1x^5)+(0.1y)(0.1y)\\
&=(0.1\times 0.1)(y\times x^5)+(0.1\times 0.1)(y\times y)\\
&=(0.1\times 0.1)(x^5\times y)+(0.1\times 0.1)(y^{1+1})\\
&=0.01x^5y+0.01y^2
\end{aligned}
$$

Thus, the answer is $0.01x^5y+0.01y^2$.

Algebraic Expressions and Identities Ex 6.4 Q8

Answer :

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

$$
\begin{aligned}
&\left(-\tfrac{7}{4}ab^2c-\tfrac{6}{25}a^2c^2\right)\left(-50a^2b^2c^2\right)\\
&=\left\{\left(-\tfrac{7}{4}ab^2c\right)\left(-50a^2b^2c^2\right)\right\}-\left\{\left(\tfrac{6}{25}a^2c^2\right)\left(-50a^2b^2c^2\right)\right\}\\
&=\left\{\left\{-\tfrac{7}{4}\times(-50)\right\}(a\times a^2)\times\left(b^2\times b^2\right)\times(c\times c^2)\right\}\\
&-\left\{\left(\tfrac{6}{25}\right)(-50)(a^2\times a^2)\times\left(b^2\right)\times(c^2\times c^2)\right\}\\
&=\left\{-\tfrac{7}{4}\times(-50)\right\}\left(a^{1+2}b^{2+2}c^{1+2}\right)-\left\{\left(\tfrac{6}{25}\right)(-50)\left(a^{2+2}b^2c^{2+2}\right)\right\}\\
&=\tfrac{175}{2}a^3b^4c^3-\left(-12a^4b^2c^4\right)\\
&=\tfrac{175}{2}a^3b^4c^3+12a^4b^2c^4
\end{aligned}
$$

Thus, the answer is $\frac{175}{2}a^3b^4c^3+12a^4b^2c^4$.

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