Algebraic Expressions and Identities Ex 6.4 Q19

**Answer :**

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

$$
\begin{aligned}
&15y^2(2-3x)\\
&=15y^2\times 2-15y^2\times 3x\\
&=30y^2-45xy^2
\end{aligned}
$$

Substituting $x=-1$ and $y=0.25$ in the result, we get:

$$
\begin{aligned}
&30y^2-45xy^2\\
&=30(0.25)^2-45(-1)(0.25)^2\\
&=30\times 0.0625-\{45\times(-1)\times 0.0625\}\\
&=30\times 0.0625-\{45\times(-1)\times 0.0625\}\\
&=1.875-(-2.8125)\\
&=1.875+2.8125\\
&=4.6875
\end{aligned}
$$

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

$$
\begin{aligned}
&-3x\left(y^2+z^2\right)\\
&=-3x\times y^2+(-3x)\times z^2\\
&=-3xy^2-3xz^2
\end{aligned}
$$

Substituting $x = -1$, $y = 0.25$ and $z = 0.05$ in the result, we get:

$$\begin{aligned}
&-3xy^2 - 3xz^2 \\
&= -3(-1)(0.25)^2 - 3(-1)(0.05)^2 \\
&= -3(-1)(0.0625) - 3(-1)(0.0025) \\
&= 01875 + 0.0075 \\
&= 0.195
\end{aligned}$$

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

$$\begin{aligned}
&z^2(x - y) \\
&= z^2 \times x - z^2 \times y \\
&= xz^2 - yz^2
\end{aligned}$$

Substituting $x = -1$, $y = 0.25$ and $z = 0.05$ in the result, we get:

$$\begin{aligned}
&xz^2 - yz^2 \\
&= (-1)(0.05)^2 - (0.25)(0.05)^2 \\
&= (-1)(0.0025) - (0.25)(0.0025) \\
&= -0.0025 - 0.000625 \\
&= -0.003125
\end{aligned}$$

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

$$\begin{aligned}
&xz\left(x^2 + y^2\right) \\
&= xz \times x^2 + xz \times y^2 \\
&= x^3z + xy^2z
\end{aligned}$$

Substituting $x = -1$, $y = 0.25$ and $z = 0.05$ in the result, we get:

$$\begin{aligned}
&x^3z + xy^2z \\
&= (-1)^3(0.05) + (-1)(0.25)^2(0.05) \\
&= (-1)(0.05) + (-1)(0.0625)(0.05) \\
&= -0.05 - 0.003125 \\
&= -0.053125
\end{aligned}$$

Algebraic Expressions and Identities Ex 6.4 Q20

**Answer :**

(i) To simplify, we will use distributive law as follows:

$$
\begin{aligned}
&2x^2\left(x^3-x\right)-3x\left(x^4+2x\right)-2\left(x^4-3x^2\right)\\
&=2x^5-2x^3-3x^5-6x^2-2x^4+6x^2\\
&=2x^5-3x^5-2x^4-2x^3-6x^2+6x^2\\
&=-x^5-2x^4-2x^3
\end{aligned}
$$

(ii) To simplify, we will use distributive law as follows:

$$
\begin{aligned}
&x^3y\left(x^2-2x\right)+2xy\left(x^3-x^4\right)\\
&=x^5y-2x^4y+2x^4y-2x^5y\\
&=x^5y-2x^5y-2x^4y+2x^4y\\
&=-x^5y
\end{aligned}
$$

(iii) To simplify, we will use distributive law as follows:

$$
\begin{aligned}
&3a^2+2(a+2)-3a(2a+1)\\
&=3a^2+2a+4-6a^2-3a\\
&=3a^2-6a^2+2a-3a+4\\
&=-3a^2-a+4
\end{aligned}
$$

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