Algebraic Expressions and Identities Ex 6.5 Q6

Answer :

To multiply, we will use distributive law as follows:

$$\left(\frac{3}{5}x+\frac{1}{2}y\right)\left(\frac{5}{6}x+4y\right)$$
$$=\frac{3}{5}x\left(\frac{5}{6}x+4y\right)+\frac{1}{2}y\left(\frac{5}{6}x+4y\right)$$
$$=\frac{1}{2}x^2+\frac{12}{5}xy+\frac{5}{12}xy+2y^2$$
$$=\frac{1}{2}x^2+\left(\frac{144+25}{60}\right)xy+2y^2$$
$$=\frac{1}{2}x^2+\frac{169}{60}xy+2y^2$$

Thus, the answer is $\frac{1}{2}x^2+\frac{169}{60}xy+2y^2$.

Algebraic Expressions and Identities Ex 6.5 Q7

Answer :

To multiply, we will use distributive law as follows:

$$\left(x^6-y^6\right)\left(x^2+y^2\right)$$
$$=x^6\left(x^2+y^2\right)-y^6\left(x^2+y^2\right)$$
$$=\left(x^8+x^6y^2\right)-\left(y^6x^2+y^8\right)$$
$$=x^8+x^6y^2-y^6x^2-y^8$$

Thus, the answer is $x^8+x^6y^2-y^6x^2-y^8$.

Algebraic Expressions and Identities Ex 6.5 Q8

Answer :

To multiply, we will use distributive law as follows:

$$\begin{aligned}&\left(x^2+y^2\right)(3a+2b)\\&=x^2(3a+2b)+y^2(3a+2b)\\&=3ax^2+2bx^2+3ay^2+2by^2\end{aligned}$$

Thus, the answer is $3ax^2+2bx^2+3ay^2+2by^2$.

Algebraic Expressions and Identities Ex 6.5 Q9

Answer :

To multiply, we will use distributive law as follows:

$$\begin{aligned}&[-3d+(-7f)](5d+f)\\&=(-3d)(5d+f)+(-7f)(5d+f)\\&=\left(-15d^2-3df\right)+\left(-35df-7f^2\right)\\&=-15d^2-3df-35df-7f^2\\&=-15d^2-38df-7f^2\end{aligned}$$

Thus, the answer is $-15d^2-38df-7f^2$.

Algebraic Expressions and Identities Ex 6.5 Q10

Answer :

To multiply, we will use distributive law as follows:

$$\begin{aligned}&(0.8a-0.5b)(1.5a-3b)\\&=0.8a(1.5a-3b)-0.5b(1.5a-3b)\\&=1.2a^2-2.4ab-0.75ab+1.5b^2\\&=1.2a^2-3.15ab+1.5b^2\end{aligned}$$

Thus, the answer is $1.2a^2-3.15ab+1.5b^2$.

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