



Exercise 6B

Q1

Answer :

By horizontal method:

$$\begin{aligned}(5x + 7) \times (3x + 4) \\&= 5x(3x + 4) + 7(3x + 4) \\&= 15x^2 + 20x + 21x + 28 \\&= 15x^2 + 41x + 28\end{aligned}$$

Q2

Answer :

By horizontal method:

$$\begin{aligned}(4x + 9) \times (x - 6) \\&= 4x(x - 6) + 9(x - 6) \\&= 4x^2 - 24x + 9x - 54 \\&= 4x^2 - 15x - 54\end{aligned}$$

Q3

Answer :

By horizontal method:

$$\begin{aligned}(2x + 5) \times (4x - 3) \\&= 2x(4x - 3) + 5(4x - 3) \\&= 8x^2 - 6x + 20x - 15 \\&= 8x^2 + 14x - 15\end{aligned}$$

Q4

Answer :

By horizontal method:

$$\begin{aligned}(3y - 8) \times (5y - 1) \\&= 3y(5y - 1) - 8(5y - 1) \\&= 15y^2 - 3y - 40y + 8 \\&= 15y^2 - 43y + 8\end{aligned}$$

Q5

Answer :

By horizontal method:

$$\begin{aligned}(7x + 2y) \times (x + 4y) \\&= 7x(x + 4y) + 2y(x + 4y) \\&= 7x^2 + 28xy + 2xy + 8y^2\end{aligned}$$

$$= 7x^2 + 30xy + 8y^2$$

Q6

Answer :

By horizontal method:

$$\begin{aligned}(9x + 5y) &\times (4x + 3y) \\ 9x(4x + 3y) &+ 5y(4x + 3y) \\ &= 36x^2 + 27xy + 20xy + 15y^2 \\ &= 36x^2 + 47xy + 15y^2\end{aligned}$$

Q7

Answer :

By horizontal method:

$$\begin{aligned}(3m - 4n) &\times (2m - 3n) \\ &= 3m(2m - 3n) - 4n(2m - 3n) \\ &= 6m^2 - 9mn - 8mn + 12n^2 \\ &= 6m^2 - 17mn + 12n^2\end{aligned}$$

Q8

Answer :

By horizontal method:

$$(x^2 - a^2) \times (x - a)$$

$$\begin{aligned}
&= x^2(x-a) - a^2(x-a) \\
&= x^3 - ax^2 - a^2x + a^3 \\
&\text{i.e. } (x^3 + a^3) - ax(x-a)
\end{aligned}$$

Q9

Answer :

By horizontal method:

$$\begin{aligned}
&(x^2 - y^2) \times (x + 2y) \\
&= x^2(x + 2y) - y^2(x + 2y) \\
&= x^3 + 2x^2y - xy^2 - 2y^3 \\
&\text{i.e. } (x^3 - 2y^3) + xy(2x - y)
\end{aligned}$$

Q10

Answer :

By horizontal method:

$$\begin{aligned}(3p^2 + q^2) \times (2p^2 - 3q^2) \\&= 3p^2(2p^2 - 3q^2) + q^2(2p^2 - 3q^2) \\&= 6p^4 - 9p^2q^2 + 2p^2q^2 - 3q^4 \\&= 6p^4 - 7p^2q^2 - 3q^4\end{aligned}$$

Q11

Answer :

By horizontal method:

$$\begin{aligned}(2x^2 - 5y^2) \times (x^2 + 3y^2) \\&= 2x^2(x^2 + 3y^2) - 5y^2(x^2 + 3y^2) \\&= 2x^4 + 6x^2y^2 - 5x^2y^2 - 15y^4 \\&= 2x^4 + x^2y^2 - 15y^4\end{aligned}$$

Q12

Answer :

By horizontal method:

$$\begin{aligned}(x^3 - y^3) \times (x^2 + y^2) \\&= x^3(x^2 + y^2) - y^3(x^2 + y^2) \\&= x^5 + x^3y^2 - x^2y^3 - y^5 \\&= (x^5 - y^5) + x^2y^2(x - y)\end{aligned}$$

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