



Exercise 6B

Q13

Answer :

By horizontal method:

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

Q14

Answer :

By horizontal method:

$$\begin{aligned} & \left(x^4 + \frac{1}{x^4}\right) \times \left(x + \frac{1}{x}\right) \\ &= x^4\left(x + \frac{1}{x}\right) + \frac{1}{x^4}\left(x + \frac{1}{x}\right) \\ &= x^5 + x^3 + \frac{1}{x^3} + \frac{1}{x^5} \\ & i.e \ x^3\left(x^2 + 1\right) + \frac{1}{x^3}\left(1 + \frac{1}{x^2}\right) \end{aligned}$$

Q15

Answer :

By horizontal method:

$$\begin{aligned} & (x^2 - 3x + 7) \times (2x + 3) \\ &= 2x(x^2 - 3x + 7) + 3(x^2 - 3x + 7) \\ &= 2x^3 - 6x^2 + 14x + 3x^2 - 9x + 21 \\ &= 2x^3 - 3x^2 + 5x + 21 \end{aligned}$$

Q16

Answer :

By horizontal method:

$$\begin{aligned}(3x^2 + 5x - 9) \times (3x - 5) \\&= 3x(3x^2 + 5x - 9) - 5(3x^2 + 5x - 9) \\&= 9x^3 + 15x^2 - 27x - 15x^2 - 25x + 45 \\&= 9x^3 - 52x + 45\end{aligned}$$

Q17

Answer :

By horizontal method:

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

Q18

Answer :

By horizontal method:

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

Q19

Answer :

By horizontal method:

$$\begin{aligned} & (x^3 - 2x^2 + 5) \times (4x - 1) \\ &= 4x(x^3 - 2x^2 + 5) - 1(x^3 - 2x^2 + 5) \\ &= 4x^4 - 8x^3 + 20x - x^3 + 2x^2 - 5 \\ &= 4x^4 - 9x^3 + 2x^2 + 20x - 5 \end{aligned}$$

Q20

Answer :

By horizontal method:

$$\begin{aligned} & (9x^2 - x + 15) \times (x^2 - 3) \\ &= x^2(9x^2 - x + 15) - 3(9x^2 - x + 15) \\ &= 9x^4 - x^3 + 15x^2 - 27x^2 + 3x - 45 \\ &= 9x^4 - x^3 - 12x^2 + 3x - 45 \end{aligned}$$

Q21

Answer :

By horizontal method:

$$\begin{aligned} & (x^2 - 5x + 8) \times (x^2 + 2) \\ &= x^2(x^2 - 5x + 8) + 2(x^2 - 5x + 8) \\ &= x^4 - 5x^3 + 8x^2 + 2x^2 - 10x + 16 \\ &= x^4 - 5x^3 + 10x^2 - 10x + 16 \end{aligned}$$

Q22

Answer :

By horizontal method:

$$\begin{aligned} & (x^3 - 5x^2 + 3x + 1) \times (x^2 - 3) \\ &= x^2(x^3 - 5x^2 + 3x + 1) - 3(x^3 - 5x^2 + 3x + 1) \\ &= x^5 - 5x^4 + 3x^3 + x^2 - 3x^3 + 15x^2 - 9x - 3 \\ &= x^5 - 5x^4 + 16x^2 - 9x - 3 \end{aligned}$$

Q23

Answer :

By horizontal method:

$$\begin{aligned} & (3x + 2y - 4) \times (x - y + 2) \\ & x(3x + 2y - 4) - y(3x + 2y - 4) + 2(3x + 2y - 4) \\ &= 3x^2 + 2xy - 4x - 3xy - 2y^2 + 4y + 6x + 4y - 8 \\ &= 3x^2 - 2y^2 - xy + 2x + 8y - 8 \end{aligned}$$

Q24

Answer :

By horizontal method:

$$\begin{aligned} & (x^2 - 5x + 8) \times (x^2 + 2x - 3) \\ &= x^2(x^2 - 5x + 8) + 2x(x^2 - 5x + 8) - 3(x^2 - 5x + 8) \\ &= x^4 - 5x^3 + 8x^2 + 2x^3 - 10x^2 + 16x - 3x^2 + 15x - 24 \\ &= x^4 - 3x^3 - 5x^2 + 31x - 24 \end{aligned}$$

Q25

Answer :

By horizontal method:

$$\begin{aligned} & (2x^2 + 3x - 7) \times (3x^2 - 5x + 4) \\ &= 2x^2(3x^2 - 5x + 4) + 3x(3x^2 - 5x + 4) - 7(3x^2 - 5x + 4) \\ &= 6x^4 - 10x^3 + 8x^2 + 9x^3 - 15x^2 + 12x - 21x^2 + 35x - 28 \\ &= 6x^4 - x^3 - 28x^2 + 47x - 28 \end{aligned}$$

Q26

Answer :

By horizontal method:

$$\begin{aligned} & (9x^2 - x + 15) \times (x^2 - x - 1) \\ &= x^2(9x^2 - x + 15) - x(9x^2 - x + 15) - 1(9x^2 - x + 15) \\ &= 9x^4 - x^3 + 15x^2 - 9x^3 + x^2 - 15x - 9x^2 + x - 15 \\ &= 9x^4 - 10x^3 + 7x^2 - 14x - 15 \end{aligned}$$

***** END *****

