Ex - 11C

Multiply.

(i) $3x$, $5x^2y$ and $2y$

Ans Product of $3x$, $5x^2y$ and $2y$
$= 3x \times 5x^2y \times 2y$
$= 3 \times 5 \times 2 \times x \times x^2 \times xy \times y$.
$= 30x^3y^2$

(ii) 5, $3a$ and $2ab^2$

Ans Product of 5, $3a$ and $2ab^2$
$= 5 \times 3a \times 2ab^2$
$= 5 \times 3 \times 2 \times a \times ab^2$
$= 30a^2b^2$

(iii) $5x + 2y$ and $3xy$.

Ans Product of $5x + 2y$ and $3xy$
$= 3xy(5x + 2y)$
$= 3xy \times 5x + 3xy \times 2y$
$= 15x^2y + 6xy^2$

(iv) $6a - 5b$ and $-2a$

Ans Product of $6a - 5b$ and $-2a$
$= -2a(6a - 5b)$
$= -2a \times 6a + (-2a)(-5b)$
$= -12a + 10ab$.

(v) $4a + 5b$ and $4a - 5b$.

Ans Product of $4a + 5b$ and $4a - 5b$

$= 16a^2 - 25b^2$

$$\begin{array}{r} 4a + 5b \\ \times\ 4a - 5b \\ \hline 16a^2 + 20ab \\ -20ab - 25b^2 \\ \hline 16a^2 - 25b^2 \end{array}$$

(vi) $9xy + 2y^2$ and $2x - 3y$

Ans Product of $9xy + 2y^2$ and $2x - 3y$

$= 18x^2y - 23xy^2 - 6y^3$

$$\begin{array}{r} 9xy + 2y^2 \\ \times\ 2x - 3y \\ \hline 18x^2y + 4xy^2 \\ -27xy^2 - 6y^3 \\ \hline 18x^2y - 23xy^2 - 6y^3 \end{array}$$

(vii) Product $-3m^2n + 5mn$ and $6m^2n$.

Ans Product of $-3m^2n + 5mn - 4mn^2$ and $6m^2n$

$= 6m^2n(-3m^2n + 5mn - 4mn^2)$

$= 6m^2n \times (-3m^2n) + 6m^2n \times 5mn + 6m^2n \times (-4mn^2)$

$= -18m^4n^2 + 30m^3n^2 - 24m^3n^3$.

(viii) $6xy^2 - 7x^2y^2 + 10x^3$ and $-3x^2y^3$

Ans Product of $6xy^2 - 7x^2y^2 + 10x^3$ and $-3x^2y^3$

$= -3x^2y^3 (6xy^2 - 7x^2y^2 + 10x^3)$

$= -3x^2y^3 \times 6xy^2 + (-3x^2y^3)(-7x^2y^2) + (-3x^2y^3) \times 10x^3$

$= -18^2y^5 + 21x^4y^5 - 30x^5y^3$

2 Copy and complete the following multiplications.

(i) $3a + 2b$

$\times \quad -3xy$

$-9axy - 6bxy$

Ans $-9axy - 6bxy$

(ii) $9x + 5y$

$\times \quad -3xy$

$-27x^2y + 15xy^2$

Ans $-27x^2y + 15xy^2$

(iii) $3xy - 2x^2 - 6x$

$\times \quad -5x^2y$

$-15x^3y^2 + 10x^4y + 30x^3y$

(iv) $a + b$

$\times \; a + b$

$a^2 + ab$

$ab + b^2$

$a^2 + 2ab + b^2$

(v) $2a - b + 3c$

$\times \; 2a - 4b$

$4a^2 - 2ab + 6ac$

$-8ab + 4b^2 - 12bc$

$4a^2 - 10ab + 6ac + 4b^2 - 12bc$

(vi) $ax - b$

$\times \; 2ax + 2b^2$

$2a^2x^2 - 2abx + 2ab^2x - 2b^3$

(vii) $3m^2 + 6m - 2n$.

$\times \quad 5n - 3m$

$15m^2n + 30mn - 10n^2 - 9m^3 - 18m^2$

$+ 6mn$

$15m^2n + 36mn - 10n^2 - 9m^3 - 18m^2$

(viii) $6 - 3x + 2x^2$

$\times \quad 1 + 5x - x^2$

$6 - 3x + 2x^2$

$+ 30x - 15x^2 + 10x^3$

$- 6x^2 + 3x^3 - 2x^4$

$6 + 27x - 19x^2 + 13x^3 - 2x^4$

(ix) $4x^3 - 10x^2 + 6x - 8$

$\times \quad 3 + 2x - x^2$

$12x^3 - 30x^2 + 18x - 24$

$8x^4 - 20x^3 + 12x^2 - 16x$

$4x^5 + 10x^4 - 6x^3 + 8x^2$

$4x^5 + 18x^4 - 14x^3 - 10x^2 + 2x - 24.$