

Exercise-11(C)

1. Multiply

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

Sol $\Rightarrow 3x \times 5x^2y \times 2y$
 $= (3 \times 5 \times 2) x x x^2 y y$
 $= 30x^3y^2$ (Ans)

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

Sol $\Rightarrow 5 \times 3a \times 2ab^2$
 $= (5 \times 3 \times 2) a a b^2$
 $= 30a^2b^2$ (Ans)

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

Sol $\Rightarrow (5x + 2y) \times 3xy$
 $= 5x \times 3xy + 2y \times 3xy$
 $= 15x^2y + 6xy^2$ (Ans)

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

Sol $\Rightarrow (6a - 5b) \times (-2a)$
 $= 6a \times (-2a) - 5b \times (-2a)$
 $= -12a^2 + 10ab$ (Ans)

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

Sol $\Rightarrow (4a + 5b) \times (4a - 5b)$

$$\begin{aligned}
 &= 4a(4a+5b) - 5b(4a+5b) \\
 &= 16a^2 + 20ab - 20ab - 25b^2 \\
 &= 16a^2 - 25b^2 \quad (\text{Ans})
 \end{aligned}$$

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

Sol $\rightarrow (9xy + 2y^2) \times (2x - 3y)$

$$\begin{aligned}
 &= 9xy(2x - 3y) + 2y^2(2x - 3y) \\
 &= 9xy \times 2x - 9xy \times 3y + 2y^2 \times 2x - 2y^2 \times 3y \\
 &= 18x^2y - 27xy^2 + 4xy^2 - 6y^3 \\
 &= 18x^2y - 23xy^2 - 6y^3 \quad (\text{Ans})
 \end{aligned}$$

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

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

$$\begin{aligned}
 &= -3m^2n \times 6m^2n + 5mn \times 6m^2n - 4mn^2 \times 6m^2n \\
 &= -18m^4n + 30m^3n^2 - 24m^4n^2
 \end{aligned}$$

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

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

$$\begin{aligned}
 &= 6xy^2 \times (-3x^2y^3) - 7x^2y^2 \times (-3x^2y^3) + 10x^3 \times (-3x^2y^3) \\
 &= -18x^3y^5 + 21x^4y^5 - 30x^5y^3 \quad (\text{Ans})
 \end{aligned}$$

Q2 Copy and complete the following multiplication

(i) $3a + 2b$

$\times -3xy$

$-9axy - 6xyb$ (Ans)

(ii) $9x - 5y$

$\times -3xy$

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

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

$-5x^2y$

$15x^3y^2 + 10x^4y + 30x^3y$ (Ans)

(iv) $a+b$
 $\times a+b$

$$a^2+ab$$

$$ab+b^2$$

$$\underline{a^2+2ab+b^2} \quad (\text{Ans})$$

(v) $ax-b$

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

$$2a^2x^2-2abx$$

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

$$\underline{2a^2x^2-2abx+2ab^2x-2b^3}$$

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

$$\times 2a-4b$$

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

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

$$\underline{4a^2-10ab+6ac+4b^2-12bc} \quad (\text{Ans})$$

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

$$\times 5n-3m$$

$$15m^2n+30mn-10n^2$$

$$+6mn-9m^3-18m^2$$

$$\underline{15m^2n+36mn-10n^2-9m^3-18m^2} \quad (\text{Ans})$$

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

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

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

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

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

$$\underline{6+27x-19x^2+13x^3-2x^4} \quad (\text{Ans})$$

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

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

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

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

$$-6x^3+8x^2$$

$$\underline{-14x^3-10x^2+2x-24+8x^4+4x^5-10x^4}$$

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

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

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

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

$$- 6x^3 + 8x^2$$

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

(Ans)