CLASS VIII: Maths
Chapter 8: Algebraic Expressions and Identities

Questions and Solutions | Exercise 8.1 - NCERT Books

Q1 :

Add the following.

(i) $ab - bc, bc - ca, ca - ab$

(ii) $a - b + ab, b - c + bc, c - a + ac$

(iii) $2p^2q^2 - 3pq + 4, 5 + 7pq - 3p^2q^2$

(iv) $l^2 + m^2, m^2 + n^2, n^2 + l^2, 2lm + 2mn + 2nl$

Answer :

The given expressions written in separate rows, with like terms one below the other and then the addition of these expressions are as follows.

(i)

$$\begin{array}{rrrr} & ab & -bc & \\ + & & bc & -ca \\ + & -ab & & +ca \\ \hline & 0 & & \end{array}$$

Thus, the sum of the given expressions is 0.

(ii)

$$\begin{array}{rrrr} & a & -b & +ab \\ + & & b & -c+bc \\ + & -a & & c \quad +ac \\ \hline & & ab & +bc+ac \end{array}$$

Thus, the sum of the given expressions is $ab + bc + ac$.

(iii)

$$\begin{array}{r} 2p^2q^2 - 3pq + 4 \\ + \quad -3p^2q^2 + 7pq + 5 \\ \hline -\ p^2q^2 + 4pq + 9 \end{array}$$

Thus, the sum of the given expressions is - $p^2q^2 + 4pq + 9$.

(iv)

$$\begin{array}{r} l^2 + m^2 \\ + \quad m^2 + n^2 \\ + \quad l^2 \quad + n^2 \\ + \quad 2lm + 2mn + 2nl \\ \hline 2l^2 + 2m^2 + 2n^2 + 2lm + 2mn + 2nl \end{array}$$

Thus, the sum of the given expressions is $2(l^2 + m^2 + n^2 + lm + mn + nl)$.

Q2 :

(a) Subtract $4a - 7ab + 3b + 12$ from $12a - 9ab + 5b - 3$

(b) Subtract $3xy + 5yz - 7zx$ from $5xy - 2yz - 2zx + 10xyz$

(c) Subtract $4p^2q - 3pq + 5pq^2 - 8p + 7q - 10$ from $18 - 3p - 11q + 5pq - 2pq^2 + 5p^2q$

Answer :

The given expressions in separate rows, with like terms one below the other and then the subtraction of these expressions is as follows.

(a)

$$\begin{array}{r} 12a - 9ab + 5b - 3 \\ 4a - 7ab + 3b + 12 \\ (-) \quad (+) \quad (-) \quad (-) \\ \hline 8a - 2ab + 2b - 15 \end{array}$$

(b)

$$\begin{array}{r} 5xy - 2yz - 2zx + 10xyz \\ 3xy + 5yz - 7zx \\ (-) \quad (-) \quad (+) \\ \hline 2xy - 7yz + 5zx + 10xyz \end{array}$$

(c)

$$\begin{array}{r} 18 - 3p - 11q + 5pq - 2pq^2 + 5p^2q \\ -10 - 8p + 7q - 3pq + 5pq^2 + 4p^2q \\ (+) \quad (+) \quad (-) \quad (+) \quad (-) \quad (-) \\ \hline 28 + 5p - 18q + 8pq - 7pq^2 + p^2q \end{array}$$