Class 7-Mathematics

Instructions for students: The notes provided must be copied to the Maths copy and then do the homework in the same copy.

Chapter 8

ALGEBRAIC EXPRESSIONS- Part 2

Addition and subtraction of algebraic expressions:

Column Method (Addition)

e.g: $7x + 2y - 3xy$

$+ 4x - 7y + 2xy$

$11x - 5y - xy$

Horizontal Method (Addition)

e.g : $7x + 2y - 3xy + 4x - 7y + 2xy = 7x + 4x + 2y - 7y - 3xy + 2xy$

$= 11x - 5y - xy$

Column Method (Subtraction)

e.g: $3y^2 + 5y - 4 - (8y - y^2 - 4)$

$3y^2 + 5y - 4$

$- \quad -y^2 + 8y - 4$

$+ \quad - \quad +$

$4y^2 - 3y + 0 = 4y^2 - 3y$

Horizontal Method (Subtraction)

e. g : $3y^2 + 5y - 4 - (8y - y^2 - 4) = 3y^2 + 5y - 4 - 8y + y^2 + 4$

$= 3y^2 + y^2 + 5y - 8y - 4 + 4$

$= 4y^2 - 3y$

Exercise 8.2

7. Subtract $p - 2q + r$ from the sum of $10p - r$ and $5p + 2q$

sum of $10p + r$ and $5p + 2q = 10p - r + 5p + 2q$

$= 15p + 2q - r$

Now, $15p + 2q + r - (p - 2q + r) = 15p + 2q - r - p + 2q - r$

$= 14p + 4q - 2r$

10. What should be subtracted from $-7mn + 2m^2 + 3n^2$ to get $m^2 + 2mn + n^2$

The required expression $= -7mn + 2m^2 + 3n^2 - (m^2 + 2mn + n^2)$
$= -7mn + 2m^2 + 3n^2 - m^2 - 2mn - n^2$
$= -9mn + m^2 + 2n^2$
$= m^2 + 2n^2 - 9mn$

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14. From the sum of $2y^2 + 3yz$, $+ -y^2 - yz - z^2$ and $yz + 2z^2$, subtract the sum of $3y^2 - z^2$ and $-y^2 + z^2 + yz$.

$$\begin{array}{r} 2y^2 + 3yz \\ + -y^2 - yz - z^2 \\ \hline yz + 2z^2 \\ \hline y^2 + 3yz + z^2 \end{array} \qquad \begin{array}{r} 3y^2 - z^2 \\ + -y^2 + z^2 + yz \\ \hline 2y^2 + yz \end{array} \quad \text{[Finding the sum]}$$

$$\begin{array}{r} y^2 + 3yz + z^2 \\ - 2y^2 + yz \\ \hline -y^2 + 2yz + z^2 \end{array} \quad \text{[Subtracting]}$$

Home Work: Complete Exercise 8.2 in the Maths Copy.