

General instructions for Students: Whatever be the notes provided, everything must be copied in the Maths copy and then do the HOMEWORK in the same copy.

MATHEMATICS

CLASS – VIII

10. ALGEBRAIC EXPRESSIONS AND IDENTITIES

EXERCISE – 10.1

1. Identify the terms, their numerical as well as literal coefficients of $12x^2yz - 4xy^2$

Terms	Numerical coefficient	Literal coefficient
$12x^2yz$	12	x^2yz
$-4xy^2$	-4	xy^2

3. Find the degree of the polynomial (iii) $4a^3b^2 - 3ab^4 + 5ab + \frac{2}{3}$

The degrees of its terms are $3 + 2$, $1 + 4$, $1 + 1$, 0

So, the degree of the polynomial is **5** *Ans.*

4. (iv) Add $4x^3 - 7x^2 + 9$, $3x^2 - 5x + 4$, $7x^3 - 11x + 1$, $6x^2 - 13x$

Horizontal Method : $(4x^3 - 7x^2 + 9) + (3x^2 - 5x + 4) + (7x^3 - 11x + 1) + (6x^2 - 13x)$
 $= 4x^3 + 7x^3 - 7x^2 + 3x^2 + 6x^2 - 5x - 11x - 13x + 9 + 4 + 1$
 $= 11x^3 + 2x^2 - 29x + 14$ *Ans.*

Column Method :

$4x^3$	$-$	$7x^2$	$+$	9			
	$+$	$3x^2$	$+$	4	$-$	$5x$	
$7x^3$			$+$	1	$-$	$11x$	
	$+$	$6x^2$			$-$	$13x$	
$11x^3$	$+$	$2x^2$	$+$	14	$-$	$29x$	<i>Ans.</i>

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

Horizontal Method :

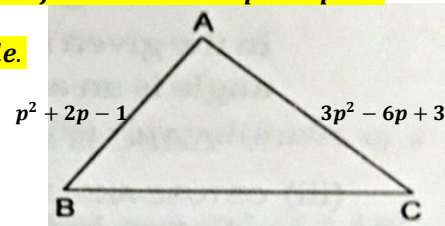
$$\begin{aligned}
 & (18 - 3p - 11q + 5pq - 2pq^2 + 5p^2q) - (4p^2q - 3pq + 5pq^2 - 8p + 7q - 10) \\
 = & 18 - 3p - 11q + 5pq - 2pq^2 + 5p^2q - 4p^2q + 3pq - 5pq^2 + 8p - 7q + 10 \\
 = & 18 + 10 - 3p + 8p - 11q - 7q + 5pq + 3pq - 2pq^2 - 5pq^2 + 5p^2q - 4p^2q \\
 = & 28 + 5p - 18q + 8pq - 7pq^2 + p^2q \quad \text{Ans.}
 \end{aligned}$$

Column Method :

$ \begin{array}{r} 18 - 3p - 11q + 5pq - 2pq^2 + 5p^2q \\ - 10 - 8p + 7q - 3pq + 5pq^2 + 4p^2q \\ \hline 28 + 5p - 18q + 8pq - 7pq^2 + p^2q \quad \text{Ans.} \end{array} $
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8. The perimeter of a triangle is $7p^2 - 5p + 11$ and two of its sides are $p^2 + 2p - 1$

and $3p^2 - 6p + 3$. Find the third side of the triangle.



$$\text{Perimeter of a triangle ABC} = 7p^2 - 5p + 11$$

$$\Rightarrow AB + BC + CA = 7p^2 - 5p + 11$$

$$\Rightarrow (p^2 + 2p - 1) + (3p^2 - 6p + 3) + CA = 7p^2 - 5p + 11$$

$$\Rightarrow (p^2 + 3p^2 + 2p - 6p - 1 + 3) + CA = 7p^2 - 5p + 11$$

$$\Rightarrow (4p^2 - 4p + 2) + CA = 7p^2 - 5p + 11$$

$$\Rightarrow CA = (7p^2 - 5p + 11) - (4p^2 - 4p + 2)$$

$$\Rightarrow CA = 7p^2 - 5p + 11 - 4p^2 + 4p - 2$$

$$\Rightarrow CA = 7p^2 - 4p^2 - 5p + 4p + 11 - 2$$

$$\Rightarrow CA = 3p^2 - p + 9 \quad \text{Ans.}$$

HOMEWORK

EXERCISE 10.1

QUESTION NUMBERS : 1(ii), (iii); 2, 3(i), (ii), (iv); 4(ii), (iv); 5(ii) and 6