

$$29 + 3x + 5y$$

ALGEBRA

$$8ab + 4ab + 2ab$$

Learning objectives

- To identify variables and constants in the given terms of an algebraic expression.
- To find the coefficients of the terms of an algebraic expression.
- To identify like and unlike terms.
- To add and subtract algebraic expressions with integer co-efficients.
- To form simple expressions in two variables.
- To understand simple linear equations and solve problems.



Recap

In class VI, we have learnt how geometric patterns and number patterns can be generalised using variables and constants. A variable takes different values which is represented by $x, y, z, \dots$ and constant has numerical values such as 31, -7 , $\frac{3}{10}$ etc.

For example,

- (i) The number of Ice – candy sticks required to form one square ($\square$) is four sticks, for two squares is eight sticks, for three squares is twelve sticks and so on.

Continuing in the same way, it is clear that if the number of squares ($\square$) to be formed is k (any natural number), then the number of candy sticks required will be $4 \times k = 4k$, where k is a variable and 4 is a constant.

This can be observed in the following table:

Number of $\square$ formed	1	2	3	...	k	...
Number of Ice candy sticks used / required	4×1	4×2	4×3	...	$4 \times k$	...
	4	8	12	...	$4k$	...

- (ii) Observe the following pattern

$$7 \times 9 = 9 \times 7,$$

$$23 \times 56 = 56 \times 23,$$

$$999 \times 888 = 888 \times 999$$

This can be generalised as $a \times b = b \times a$, where a, b are variables.



Try these

1. Identify the variables and constants among the following terms:

$$a, 11 - 3x, xy, -89, -m, -n, 5, 5ab, -5, 3y, 8pqr, 18, -9t, -1, -8$$