

# Substitution

## Class VI

### Assignment iii

Instructions to the students : The notes provided must be copied to the math's copy & then do the Home Work in the same copy.

- In the given expression , the process of replacing each variable by a given value of it is called substitution.

### Examples

i) If  $x = 5$  find the value of

$$x^2 + x + 3$$
$$(5)^2 + 5 + 3$$
$$25 + 5 + 3$$
$$33$$

ii) If  $a = 4$  ,  $b = 5$  find

$$6a^2 + 2ab$$
$$6 \times (4)^2 + 2 \times 4 \times 5$$
$$6 \times 16 + 40$$
$$96 + 40$$
$$136$$

### Simple equation

A statement of equality in one variable is called an equation in that variable.

Ex.  $X - 3 = 5$  ,  $3y + 2 = 8$  ,  $2X - 7 = 3$

### Solution of an equation

The value of the variable which when substituted in the given equation makes the LHS = RHS , is called a solution or root of the given equation.

### Example

i) Solve

$$3X - 4 = 11$$
$$3X - 4 + 4 = 11 + 4$$

$$3X = 15$$

$$X = \frac{\cancel{15}}{\cancel{3}}$$

$$X = 5$$

ii)  $3X + 5 = 8$

$$3X + 5 - 5 = 8 - 5$$

$$3X = 3$$

$$X = \frac{\cancel{3}}{\cancel{3}}$$

$$X = 1$$

iii)  $5(X - 1) = 2(X + 3) + 1$

$$5X - 5 = 2X + 6 + 1$$

$$5X - 5 = 2X + 7$$

$$5X - 2X = 7 + 5$$

$$3X = 12$$

$$X = \frac{\cancel{12}}{\cancel{3}}$$

$$X = 4$$

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## Home Work

Ex 9.4 QNo. 2, 3, 4

Ex 9.5 QNo. 1 & 2