Mathematics

Class – VII , Ch: 04, 'Simple Equations'

Points:

Constant: A quantity which takes a fixed numerical value is called a constant.

ex – 4, 7, $-\frac{1}{2}$ etc.

Variable: The word variable means something that can vary. The value of a variable is not fixed. It is denoted by letters of alphabet such as x, y, z, l, m etc.

Equation: Equation is a kind of condition on a variable.

Ex – $5x+3=33$. It has two parts LHS and RHS.

'Ex :- 4.1'

Q.1. Sol.

Equation	Value	Yes/No.
(i) $x+3=0$	$x=3$	No

Reason: For, $x=3$ **Result**

$x+3 = 3+3 = 6$ "LHS $\neq$ RHS"

$= LHS$,

(ii) $x-7=1$ $x=8$ yes.

Reason: $LHS = x-7$

$= 8-7 = 1 = RHS.$

Result: LHS = RHS

(iii) $\frac{m}{3}=2$ $m=0$ No.

Reason: $LHS = \frac{m}{3} = 2$

$= \frac{0}{3} = 0 = LHS.$

Result: LHS ≠ RHS.

Q.2. Sol.

(a) Equation Value

$n+5=19$ $n=1$

Put up the value of n in equation.

$n+5=19$

$\Rightarrow 1+5=19$

$\Rightarrow 6 \neq 19$, Here, LHS ≠ RHS.

Result: $(n=1)$ is not solution of given equation.

(b) $7n+5=19$ $(n=2)$.

put up the value of n in given equation.

$7n + 5 = 19$

$\Rightarrow 7 \times (2) + 5 = 19$

$\Rightarrow 14 + 5 = 19$

$\Rightarrow 19 = 19$, Here, LHS = RHS

Result: $(n = 2)$ is the solution of given equation.

(c) $4p - 3 = 13 \quad (p = 0)$.

put up the value of p in given equation.

$4p - 3 = 13$

$\Rightarrow 4 \times 0 - 3 = 13$

$\Rightarrow 0 - 3 = 13$

$\Rightarrow -3 \neq 13$ Here, LHS $\neq$ RHS.

Result: $(p = 0)$ is not the solution of given equation.

Q.3. Sol. Solution by trial and error method.

(i) $5p + 2 = 17$, To solve the equation by this method, we let $p = 1, 2, 3 \cdots$

Let $p = 1$. Then,

$5p + 2 = 17$

$\Rightarrow 5 \times 1 + 2 = 17$

$\Rightarrow 5 + 2 = 17$

$\Rightarrow 7 \neq 17$

Let $p = 2$. Then,

$5p + 2 = 17$

$\Rightarrow 5 \times 2 + 2 = 17$

$\Rightarrow 10 + 2 = 17$

$\Rightarrow 12 \neq 17$

Now, let $p = 3$

$5p + 2 = 17$

$\Rightarrow 5 \times 3 + 2 = 17$

$\Rightarrow 15 + 2 = 17$

$\Rightarrow 17 = 17$, Here, LHS = RHS.

Hence, $p = 3$ is the solution of given equation.

Q.4. Sol:

(i) The sum of number x and 4 is 9

Sum of x and 4 is $x + 4$

The sum is 9

Hence, required equation

$\Rightarrow \boxed{x + 4 = 9}$ ✓

(ii) 2 subtracted from y is 8.

Difference of y and 2 is $y - 2$.

The difference is 8

Hence, required equation

$\Rightarrow \boxed{y - 2 = 8}$ ✓

(iii) The number b divided by 5 gives 6.

The number b divided by 5 is $b/5$

It is 6

Hence, Required equation

$\Rightarrow \boxed{\frac{b}{5} = 6}$ ✓

(iv) One fourth of a number minus 4 gives 4.

Let a number be x.

One-fourth of x is $\frac{x}{4}$

now, Subtract 4 from it

$\Rightarrow \frac{x}{4} - 4$

Result is 4

Hence, Required equation

$\Rightarrow \boxed{\frac{x}{4} - 4 = 4}$ ✓