NCERT Solutions For Class 7 Maths Simple Equations Exercise 4.1

**Q1.** Complete the last column of the table.

| S. No. | Equation | Value | Say, whether the equation is satisfied. (Yes/No) |
|---|---|---|---|
| (i) | $x+3=0$ | $x=3$ | - |
| (ii) | $x+3=0$ | $x=0$ | - |
| (iii) | $x+3=0$ | $x=-3$ | - |
| (iv) | $x-7=1$ | $x=7$ | - |
| (v) | $x-7=1$ | $x=8$ | - |
| (vi) | $5x=25$ | $x=0$ | - |
| (vii) | $5x=25$ | $x=5$ | - |
| (viii) | $5x=25$ | $x=-5$ | - |
| (ix) | $\frac{m}{3}=2$ | $m=-6$ | - |
| (x) | $\frac{m}{3}=2$ | $m=0$ | - |
| (xi) | $\frac{m}{3}=2$ | $m=6$ | - |

**Ans:**

(i)$x+3=0$

L.H.S. $=x+3$

By putting $x=3$,

L.H.S. $=3+3=6 \neq$ R.H.S.

$\therefore$ No, the equation is not satisfied.

(ii)$x+3=0$

L.H.S. $=x+3$

By putting $x=0$,

L.H.S. $=0+3=3 \neq$ R.H.S.

$\therefore$ No, the equation is not satisfied.

(iii)$x+3=0$

L.H.S. $=x+3$

By putting $x=-3$,

L.H.S. $=-3+3=0=$ R.H.S.

$\therefore$ Yes, the equation is satisfied.

(iv)$x-7=1$

L.H.S. $=x-7$

By putting $x=7$,

L.H.S. $=7-7=0 \neq$ R.H.S.

$\therefore$ No, the equation is not satisfied.

(v)$x-7=1$

L.H.S. $=x-7$

By putting x= 8,

L.H.S. $=8-7=1=$ R.H.S.

∴ Yes, the equation is satisfied.

(vi) $5x = 25$

L.H.S. = $5x$

By putting x= 0,

L.H.S. = $5 \times 0 = 0 \neq$ R.H.S.

∴ No, the equation is not satisfied.

(vii) $5x = 25$

L.H.S. = $5x$

By putting x= 5,

L.H.S. = $5 \times 5 = 25 =$ R.H.S.

∴ Yes, the equation is satisfied.

(viii) $5x = 25$

L.H.S. = $5x$

By putting x= - 5,

L.H.S. = $5 \times (-5) = -25 \neq$ R.H.S.

∴ No, the equation is not satisfied.

(ix) $\frac{m}{3} = 2$

L.H.S. = $\frac{m}{3}$

By putting $m = -6$,

L. H. S. = $\frac{-6}{3} = -2 \neq$ R.H.S.

∴No, the equation is not satisfied.

(x) $\frac{m}{3} = 2$

L.H.S. $= \frac{m}{3}$

By putting m= 0,

L.H.S. $= \frac{0}{3} = 0 \neq$ R.H.S.

∴No, the equation is not satisfied.

(xi) $\frac{m}{3} = 2$

L.H.S. $= \frac{m}{3}$

By putting m= 6,

L.H.S. $= \frac{6}{3} = 2 =$ R.H.S.

∴ Yes, the equation is satisfied.

**Q2.** Check whether the value given in the brackets is a solution to the given equation or not:

(a)$n+5 = 19$ ($n= 1$) (b) $7n+5 = 19$ ($n= -2$)

(c) $7n+5 = 19$ ($n= 2$) (d) $4p-3 = 13$ ($p= 1$)

(e) $4p-3 = 13$ ($p= -4$) (f) $4p-3 = 13$ ($p= 0$)

**Ans:**

(a)$n+5 = 19$ ($n= 1$)

Putting n= 1 in L.H.S.,

$n+5 = 1+5 = 6 \neq 19$

As L.H.S. ≠ R.H.S.,

Therefore,$n = 1$ is not a solution of the given equation,$n + 5 = 19$.

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

Putting $n = -2$ in L.H.S.,

$7n + 5 = 7 \times (-2) + 5 = -14 + 5 = -9 \neq 19$

As L.H.S. ≠ R.H.S.,

Therefore,$n = -2$ is not a solution of the given equation, $7n + 5 = 19$.

(c) $7n + 5 = 19$ ($n = 2$)

Putting n= 2 in L.H.S.,

$7n + 5 = 7 \times (2) + 5 = 14 + 5 = 19$ = R.H.S.

As L.H.S. = R.H.S.,

Therefore,$n = 2$ is a solution of the given equation, $7n + 5 = 19$.

(d) $4p - 3 = 13$ ($p = 1$)

Putting p= 1 in L.H.S.,

$4p - 3 = (4 \times 1) - 3 = 1 \neq 13$

As L.H.S ≠ R.H.S.,

Therefore,$p = 1$ is not a solution of the given equation, $4p - 3 = 13$.

(e) $4p - 3 = 13$ ($p = -4$)

Putting p= -4 in L.H.S.,

$4p - 3 = 4 \times (-4) - 3 = -16 - 3 = -19 \neq 13$

As L.H.S. ≠ R.H.S.,

Therefore,$p$= -4 is not a solution of the given equation, $4p$- 3 = 13.

(f) $4p$- 3 = 13 ($p$= 0)

Putting p= 0 in L.H.S.,

$4p$- 3 = (4 x 0) - 3 = -3 ≠ 13

As L.H.S. ≠ R.H.S.,

Therefore,$p$= 0 is not a solution of the given equation, $4p$- 3 = 13.

**Q3.** Solve the following equations by trial and error method:

(i) $5p$+ 2 = 17 (ii) $3m$- 14 = 4

**Ans:**

(i) $5p$+ 2 = 17

Putting p= 1 in L.H.S.,

(5 x 1) + 2 = 7 ≠ R.H.S.

Putting p= 2 in L.H.S.,

(5 x 2) + 2 = 10 + 2 = 12 ≠ R.H.S.

Putting $p$= 3 in L.H.S.,

(5 x 3) + 2 = 17 = R.H.S.

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

(ii) $3m$- 14 = 4

putting m= 4,

(3 x 4) - 14 = -2 ≠ R.H.S.

putting m= 5,

(3 x 5) - 14 = 1 ≠ R.H.S.

putting m= 6,

(3 x 6) - 14 = 18 - 14 = 4 = R.H.S.

Hence,$m$= 6 is a solution of the given equation.

**Q4.** Write equations for the following statements:

(i) The sum of numbers $x$ and 4 is 9.

(ii) 2 subtracted from $y$ is 8.

(iii) Ten times $a$ is 70.

(iv) The number $b$ divided by 5 gives 6.

(v) Three-fourth of $t$ is 15.

(vi) Seven times $m$ plus 7 gets you 77.

(vii) One-fourth of a number $x$ minus 4 gives 4.

(viii) If you take away 6 from 6 times $y$, you get 60.

(ix) If you add 3 to one-third of $z$, you get 30.

**Ans:**

(i)$x$+ 4 = 9

(ii)$y$- 2 = 8

(iii) 10$a$= 70

(iv) $\frac{b}{5}=6$

(v) $\frac{3}{4}t=15$

(vi) Seven times of $m$ is 7$m$.

7$m$+ 7 = 77

(vii) One-fourth of a number $x$ is $\frac{x}{4}$.

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

(viii) Six times of $y$ is $6y$.

$6y - 6 = 60$

(ix) One-third of $z$ is $\frac{z}{3}$.

$\frac{z}{3} + 3 = 30$

**Q5.** Write the following equations in statement forms:

(i) $p + 4 = 15$ (ii) $m - 7 = 3$

(iii) $2m = 7$ (iv) $\frac{m}{5} = 3$

(v) $\frac{3m}{5} = 6$ (vi) $3p + 4 = 25$

(vii) $4p - 2 = 18$ (viii) $\frac{p}{2} + 2 = 8$

**Ans:**

(i) The sum of $p$ and 4 is 15.

(ii) 7 subtracted from $m$ is 3.

(iii) Twice of a number $m$ is 7.

(iv) One-fifth of $m$ is 3.

(v) Three-fifth of $m$ is 6.

(vi) Three times of a number $p$, when added to 4, gives 25.

(vii) When 2 is subtracted from four times of a number $p$, it gives 18.

(viii) When 2 is added to half of a number $p$, it gives 8.

**Q6.** Set up an equation in the following cases:

(i) Irfan says that he has 7 marbles more than five times the marbles Parmit has. Irfan has 37 marbles. (Take $m$ to be the number of Parmit's marbles.)

(ii) Laxmi's father is 49 years old. He is 4 years older than three times Laxmi's age. (Take Laxmi's age to be $y$ years.)

(iii) The teacher tells the class that the highest marks obtained by a student in her class is twice the lowest marks plus 7. The highest score is 87. (Take the lowest score to be $l$.)

(iv) In an isosceles triangle, the vertex angle is twice either base angle. (Let the base angle be $b$ in degrees. Remember that the sum of angles of a triangle is 180 degrees.)

**Ans:**

(i) Let Parmit has $m$ marbles.

5 x Number of marbles Parmit has + 7 = Number of marbles Irfan has

$5 x m + 7 = 37$

$5m + 7 = 37$

(ii) Let Laxmi be $y$ years old.

3 x Laxmi's age + 4 = Laxmi's father's age

$3 x y + 4 = 49$

$3y + 4 = 49$

(iii) Let the lowest marks be $l$.

2 x Lowest marks + 7 = Highest marks

$2 x l + 7 = 87$

$2l + 7 = 87$

(iv) An isosceles triangle has two of its angles of equal measure.

Let base angle be $b$.

Vertex angle = 2 x Base angle = $2b$

Sum of all interior angles of a $\Delta = 180°$

$b + b + 2b = 180°$

$4b = 180°$

********** END **********