Access answers to Maths NCERT Solutions for Class 7 Chapter 4 – Simple Equations Exercise 4.1

1. 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)	(m/3) = 2	m = – 6	
(x)	(m/3) = 2	m = 0	
(xi)	(m/3) = 2	m = 6	

Solution:-

(i) x + 3 = 0

LHS = x + 3

By substituting the value of x = 3

Then,

LHS = 3 + 3 = 6

By comparing LHS and RHS

LHS ≠ RHS

∴No, the equation is not satisfied.

(ii) x + 3 = 0

LHS = x + 3

By substituting the value of x = 0

Then,

LHS = 0 + 3 = 3

By comparing LHS and RHS
LHS ≠ RHS

∴No, the equation is not satisfied.

(iii) x + 3 = 0
LHS = x + 3
By substituting the value of x = – 3
Then,
LHS = – 3 + 3 = 0
By comparing LHS and RHS
LHS = RHS

∴Yes, the equation is satisfied

(iv) x – 7 = 1
LHS = x – 7
By substituting the value of x = 7
Then,
LHS = 7 – 7 = 0
By comparing LHS and RHS
LHS ≠ RHS

∴No, the equation is not satisfied

(v) x – 7 = 1
LHS = x – 7
By substituting the value of x = 8
Then,
LHS = 8 – 7 = 1
By comparing LHS and RHS
LHS = RHS

∴Yes, the equation is satisfied.

(vi) 5x = 25

LHS = 5x
By substituting the value of x = 0
Then,
LHS = 5 × 0 = 0
By comparing LHS and RHS
LHS ≠ RHS

∴No, the equation is not satisfied.

(vii) 5x = 25
LHS = 5x
By substituting the value of x = 5
Then,
LHS = 5 × 5 = 25
By comparing LHS and RHS
LHS = RHS

∴Yes, the equation is satisfied.

(viii) 5x = 25
LHS = 5x
By substituting the value of x = -5
Then,
LHS = 5 × (-5) = – 25
By comparing LHS and RHS
LHS ≠ RHS

∴No, the equation is not satisfied.

(ix) m/3 = 2
LHS = m/3
By substituting the value of m = – 6
Then,
LHS = -6/3 = – 2
By comparing LHS and RHS
LHS ≠ RHS

∴No, the equation is not satisfied.

(x) m/3 = 2
LHS = m/3
By substituting the value of m = 0
Then,
LHS = 0/3 = 0
By comparing LHS and RHS
LHS ≠ RHS

∴No, the equation is not satisfied.

(xi) m/3 = 2
LHS = m/3
By substituting the value of m = 6
Then,
LHS = 6/3 = 2
By comparing LHS and RHS
LHS = RHS

∴Yes, the equation is satisfied.

S. No.	Equation	Value	Say, whether the equation is satisfied. (Yes/No)
(i)	x + 3 = 0	x = 3	No
(ii)	x + 3 = 0	x = 0	No
(iii)	x + 3 = 0	x = -3	Yes
(iv)	x – 7 = 1	x = 7	No
(v)	x – 7 = 1	x = 8	Yes
(vi)	5x = 25	x = 0	No
(vii)	5x = 25	x = 5	Yes
(viii)	5x = 25	x = -5	No
(ix)	(m/3) =	m = –	No

	2	6	
(x)	(m/3) = 2	m = 0	No
(xi)	(m/3) = 2	m = 6	Yes

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

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

Solution:-

LHS = n + 5

By substituting the value of n = 1

Then,

LHS = n + 5

= 1 + 5

= 6

By comparing LHS and RHS

6 ≠ 19

LHS ≠ RHS

Hence, the value of n = 1 is not a solution to the given equation n + 5 = 19.

(b) 7n + 5 = 19 (n = – 2)

Solution:-

LHS = 7n + 5

By substituting the value of n = -2

Then,

LHS = 7n + 5

= (7 × (-2)) + 5

= – 14 + 5

= – 9

By comparing LHS and RHS

-9 ≠ 19

LHS ≠ RHS

Hence, the value of n = -2 is not a solution to the given equation 7n + 5 = 19.

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

Solution:-

LHS = 7n + 5

By substituting the value of n = 2

Then,

LHS = 7n + 5

= (7 × (2)) + 5

= 14 + 5

= 19

By comparing LHS and RHS

19 = 19

LHS = RHS

Hence, the value of n = 2 is a solution to the given equation 7n + 5 = 19.

(d) 4p – 3 = 13 (p = 1)

Solution:-

LHS = 4p – 3

By substituting the value of p = 1

Then,

LHS = 4p – 3

= (4 × 1) – 3

= 4 – 3

= 1

By comparing LHS and RHS

1 ≠ 13

LHS ≠ RHS

Hence, the value of p = 1 is not a solution to the given equation 4p – 3 = 13.

(e) 4p – 3 = 13 (p = – 4)

Solution:-

LHS = 4p – 3

By substituting the value of p = – 4

Then,

LHS = 4p – 3

= (4 × (-4)) – 3

= -16 – 3

= -19

By comparing LHS and RHS

-19 ≠ 13

LHS ≠ RHS

Hence, the value of p = -4 is not a solution to the given equation 4p – 3 = 13.

(f) 4p – 3 = 13 (p = 0)

Solution:-

LHS = 4p – 3

By substituting the value of p = 0

Then,

LHS = 4p – 3

= (4 × 0) – 3

= 0 – 3

= -3

By comparing LHS and RHS

– 3 ≠ 13

LHS ≠ RHS

Hence, the value of p = 0 is not a solution to the given equation 4p – 3 = 13.

3. Solve the following equations by trial and error method:

(i) 5p + 2 = 17

Solution:-

LHS = 5p + 2

By substituting the value of p = 0

Then,

LHS = 5p + 2

= (5 × 0) + 2

= 0 + 2

= 2

By comparing LHS and RHS

2 ≠ 17

LHS ≠ RHS

Hence, the value of p = 0 is not a solution to the given equation.

Let, p = 1

LHS = 5p + 2

= (5 × 1) + 2

= 5 + 2

= 7

By comparing LHS and RHS

7 ≠ 17

LHS ≠ RHS

Hence, the value of p = 1 is not a solution to the given equation.

Let, p = 2

LHS = 5p + 2

= (5 × 2) + 2

= 10 + 2

= 12

By comparing LHS and RHS

12 ≠ 17

LHS ≠ RHS

Hence, the value of p = 2 is not a solution to the given equation.

Let, p = 3

LHS = 5p + 2

= (5 × 3) + 2

= 15 + 2

= 17

By comparing LHS and RHS

17 = 17

LHS = RHS

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

(ii) 3m – 14 = 4

Solution:-

LHS = 3m – 14

By substituting the value of m = 3

Then,

LHS = 3m – 14

= (3 × 3) – 14

= 9 – 14

= – 5

By comparing LHS and RHS

-5 ≠ 4

LHS ≠ RHS

Hence, the value of m = 3 is not a solution to the given equation.

Let, m = 4

LHS = 3m – 14

= (3 × 4) – 14

= 12 – 14

= – 2

By comparing LHS and RHS

-2 ≠ 4

LHS ≠ RHS

Hence, the value of m = 4 is not a solution to the given equation.

Let, m = 5

LHS = 3m – 14

= (3 × 5) – 14

= 15 – 14

= 1

By comparing LHS and RHS

1 ≠ 4

LHS ≠ RHS

Hence, the value of m = 5 is not a solution to the given equation.

Let, m = 6

LHS = 3m – 14

= (3 × 6) – 14

= 18 – 14

= 4

By comparing LHS and RHS

4 = 4

LHS = RHS

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

4. Write equations for the following statements:

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

Solution:-

The above statement can be written in the equation form as,

= x + 4 = 9

(ii) 2 subtracted from y is 8.

Solution:-

The above statement can be written in the equation form as,

= y – 2 = 8

(iii) Ten times a is 70.

Solution:-

The above statement can be written in the equation form as,

= 10a = 70

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

Solution:-

The above statement can be written in the equation form as,

= (b/5) = 6

(v) Three-fourth of t is 15.

Solution:-

The above statement can be written in the equation form as,

= ¾t = 15

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

Solution:-

The above statement can be written in the equation form as,

Seven times m is 7m

= 7m + 7 = 77

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

Solution:-

The above statement can be written in the equation form as,

One-fourth of a number x is x/4

= x/4 – 4 = 4

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

Solution:-

The above statement can be written in the equation form as,

6 times of y is 6y

= 6y – 6 = 60

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

Solution:-

The above statement can be written in the equation form as,

One-third of z is z/3

= 3 + z/3 = 30

5. Write the following equations in statement forms:

(i) p + 4 = 15

Solution:-

The sum of numbers p and 4 is 15.

(ii) m – 7 = 3

Solution:-

7 subtracted from m is 3.

(iii) 2m = 7

Solution:-

Twice of number m is 7.

(iv) m/5 = 3

Solution:-

The number m divided by 5 gives 3.

(v) (3m)/5 = 6

Solution:-

Three-fifth of m is 6.

(vi) 3p + 4 = 25

Solution:-

Three times p plus 4 gives you 25.

(vii) 4p – 2 = 18

Solution:-

Four times p minus 2 gives you 18.

(viii) p/2 + 2 = 8

Solution-

If you add half of a number p to 2, you get 8.

6. 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.)

Solution:-

From the question it is given that,

Number of Parmit's marbles = m

Then,

Irfan has 7 marbles more than five times the marbles Parmit has

= 5 × Number of Parmit's marbles + 7 = Total number of marbles Irfan having

= (5 × m) + 7 = 37

= 5m + 7 = 37

(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.)

Solution:-

From the question it is given that,

Let Laxmi's age to be = y years old

Then,

Lakshmi's father is 4 years older than three times of her age

= 3 × Laxmi's age + 4 = Age of Lakshmi's father

= (3 × y) + 4 = 49

= 3y + 4 = 49

(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.)

Solution:-

From the question it is given that,

Highest score in the class = 87

Let lowest score be l

= 2 × Lowest score + 7 = Highest score in the class

= (2 × l) + 7 = 87

= 2l + 7 = 87

(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).

Solution:-

From the question it is given that,

We know that, the sum of angles of a triangle is 180^o

Let base angle be b

Then,

Vertex angle = 2 × base angle = 2b

= b + b + 2b = 180^o

= 4b = 180^o