Access answers to Maths NCERT Solutions for Class 7 Chapter 4 – Simple Equations Exercise 4.4

1. Set up equations and solve them to find the unknown numbers in the following cases:

(a) Add 4 to eight times a number; you get 60.

Solution:-

Let us assume the required number be x

Eight times a number = 8x

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

= 8x + 4 = 60

By transposing 4 from LHS to RHS it becomes – 4

= 8x = 60 – 4

= 8x = 56

Divide both side by 8,

Then we get,

= (8x/8) = 56/8

= x = 7

(b) One-fifth of a number minus 4 gives 3.

Solution:-

Let us assume the required number be x

One-fifth of a number = (1/5) x = x/5

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

= (x/5) – 4 = 3

By transposing – 4 from LHS to RHS it becomes 4

= x/5 = 3 + 4

= x/5 = 7

Multiply both side by 5,

Then we get,

= (x/5) × 5 = 7 × 5

= x = 35

(c) If I take three-fourths of a number and add 3 to it, I get 21.

Solution:-

Let us assume the required number be x

Three-fourths of a number = (3/4) x

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

= (3/4) x + 3 = 21

By transposing 3 from LHS to RHS it becomes – 3

= (3/4) x = 21 – 3

= (3/4) x = 18

Multiply both side by 4,

Then we get,

= (3x/4) × 4 = 18 × 4

= 3x = 72

Then,

Divide both side by 3,

= (3x/3) = 72/3

= x = 24

(d) When I subtracted 11 from twice a number, the result was 15.

Solution:-

Let us assume the required number be x

Twice a number = 2x

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

= 2x –11 = 15

By transposing -11 from LHS to RHS it becomes 11

= 2x = 15 + 11

= 2x = 26

Then,

Divide both side by 2,

= (2x/2) = 26/2

= x = 13

(e) Munna subtracts thrice the number of notebooks he has from 50, he finds the result to be 8.

Solution:-

Let us assume the required number be x

Thrice the number = 3x

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

= 50 – 3x = 8

By transposing 50 from LHS to RHS it becomes – 50

= – 3x = 8 – 50

= -3x = – 42

Then,

Divide both side by -3,

= (-3x/-3) = – 42/-3

= x = 14

(f) Ibenhal thinks of a number. If she adds 19 to it and divides the sum by 5, she will get 8.

Solution:-

Let us assume the required number be x

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

= (x + 19)/5 = 8

Multiply both side by 5,

= ((x + 19)/5) × 5 = 8 × 5

= x + 19 = 40

Then,

By transposing 19 from LHS to RHS it becomes – 19

= x = 40 – 19

= x = 21

(g) Anwar thinks of a number. If he takes away 7 from 5/2 of the number, the result is 23.

Solution:-

Let us assume the required number be x

5/2 of the number = (5/2) x

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

= (5/2) x – 7 = 23

By transposing -7 from LHS to RHS it becomes 7

= (5/2) x = 23 + 7

= (5/2) x = 30

Multiply both side by 2,

= ((5/2) x) × 2 = 30 × 2

= 5x = 60

Then,

Divide both the side by 5

= 5x/5 = 60/5

= x = 12

2. Solve the following:

(a) 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. What is the lowest score?

Solution:-

Let us assume the lowest score be x

From the question it is given that,

The highest score is = 87

Highest marks obtained by a student in her class is twice the lowest marks plus 7= 2x + 7

5/2 of the number = (5/2) x

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

Then,

= 2x + 7 = Highest score

= 2x + 7 = 87

By transposing 7 from LHS to RHS it becomes -7

= 2x = 87 – 7

= 2x = 80

Now,

Divide both the side by 2

= 2x/2 = 80/2

= x = 40

Hence, the lowest score is 40

(b) In an isosceles triangle, the base angles are equal. The vertex angle is 40°.

What are the base angles of the triangle? (Remember, the sum of three angles of a triangle is 180°).

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,

$= b + b + 40^o = 180^o$

$= 2b + 40 = 180^o$

By transposing 40 from LHS to RHS it becomes -40

$= 2b = 180 – 40$

$= 2b = 140$

Now,

Divide both the side by 2

$= 2b/2 = 140/2$

$= b = 70^o$

Hence, 70^o is the base angle of an isosceles triangle.

(c) Sachin scored twice as many runs as Rahul. Together, their runs fell two short of a double century. How many runs did each one score?

Solution:-

Let us assume Rahul's score be x

Then,

Sachin scored twice as many runs as Rahul is 2x

Together, their runs fell two short of a double century,

= Rahul's score + Sachin's score = 200 – 2

$= x + 2x = 198$

$= 3x = 198$

Divide both the side by 3,

$= 3x/3 = 198/3$

$= x = 66$

So, Rahul's score is 66

And Sachin's score is $2x = 2 \times 66 = 132$

3. Solve the following:

(i) Irfan says that he has 7 marbles more than five times the marbles Parmit has.

Irfan has 37 marbles. How many marbles does Parmit have?

Solution:-

Let us assume number of Parmit's marbles = m

From the question it is given that,

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

$= (5 \times m) + 7 = 37$

$= 5m + 7 = 37$

By transposing 7 from LHS to RHS it becomes -7

$= 5m = 37 – 7$

$= 5m = 30$

Divide both the side by 5

= 5m/5 = 30/5

= m = 6

So, Permit has 6 marbles

(ii) Laxmi's father is 49 years old. He is 4 years older than three times Laxmi's age. What is Laxmi's age?

Solution:-

Let Laxmi's age to be = y years old

From the question it is given that,

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

By transposing 4 from LHS to RHS it becomes -4

= 3y = 49 – 4

= 3y = 45

Divide both the side by 3

= 3y/3 = 45/3

= y = 15

So, Lakshmi's age is 15 years.

(iii) People of Sundargram planted trees in the village garden. Some of the trees were fruit trees. The number of non-fruit trees were two more than three times the number of fruit trees. What was the number of fruit trees planted if the number of non-fruit trees planted was 77?

Solution:-

Let the number of fruit tress be f.

From the question it is given that,

3 × number of fruit trees + 2 = number of non-fruit trees

= 3f + 2 = 77

By transposing 2 from LHS to RHS it becomes -2

=3f = 77 – 2

= 3f = 75

Divide both the side by 3

= 3f/3 = 75/3

= f = 25

So, number of fruit tree was 25.

4. Solve the following riddle:

I am a number,

Tell my identity!

Take me seven times over

And add a fifty!

To reach a triple century

You still need forty!

Solution:-

Let us assume the number be x.

Take me seven times over and add a fifty = 7x + 50

To reach a triple century you still need forty = (7x + 50) + 40 = 300

= 7x + 50 + 40 = 300

= 7x + 90 = 300

By transposing 90 from LHS to RHS it becomes -90

= 7x = 300 – 90

= 7x = 210

Divide both side by 7

= 7x/7 = 210/7

= x = 30

Hence the number is 30.