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.
    (b) One-fifth of a number minus 4 gives 3.
    (c) If I take three-fourths of a number and add 3 to it, I get 21.
    (d)When I subtracted 11 from twice a number, the result was 15.
    (e) Munna subtracts thrice the number of notebooks he has from 50, he finds the result to
   be 8.
(f) Ibenhal thinks of a number. If she adds 19 to it and divides the sum by 5, she will get 8.
(g)Anwar thinks of a number. If he takes away 7 from 5/2 of the number, the result is 23.

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?

(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°).

(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?

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?

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

(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?
(iv)   Solve the following riddle:

I am a number,   Tell my identity! And

Take me seven times over   add a fifty! You still

To reach a triple century   need forty

<center>**ANSWER KEY**</center>

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,

$= (x/5) \times 5 = 7 \times 5$

$= x = 35$

   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

$\qquad$ = 2x = 87 - 7

$\qquad$ = 2x = 80

Now,

Divide both the side by 2

$\qquad$ = 2x/2 = 80/2

$\qquad$ = 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° Let base
angle be b

Then,

$\qquad$ = b + b + 40° = 180°

$\qquad$ = 2b + 40 = 180°

By transposing 40 from LHS to RHS it becomes -40

$\qquad$ = 2b = 180 – 40

$\qquad$ = 2b = 140

Now,

Divide both the side by 2

= 2b/2 = 140/2
= b = 70º
Hence, 70º 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,

$$= \text{Rahul's score} + \text{Sachin's score} = 200 - 2$$
$$= x + 2x = 198$$
$$= 3x = 198$$

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

$$= 5 \times \text{Number of Parmit's marbles} + 7 = \text{Total number of marbles Irfan having}$$
$$= (5 \times m) + 7 = 37$$
$$= 5m + 7 = 37$$

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

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

$\qquad$ = (3 × y) + 4 = 49

$\qquad$ = 3y + 4 = 49

By transposing 4 from LHS to RHS it becomes -4

$\qquad$ = 3y = 49 - 4

$\qquad$ = 3y = 45

Divide both the side by 3

$\qquad$ = 3y/3 = 45/3

$\qquad$ = 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

$\qquad$ = 3f + 2 = 77

By transposing 2 from LHS to RHS it becomes -2

$\qquad$ =3f = 77 – 2

$\qquad$ = 3f = 75

Divide both the side by 3

$\qquad$ = 3f/3 = 75/3

$\qquad$ = f = 25

So, number of fruit tree was 25.

(iv)   Solve the following riddle:

I am a number,

Tell my identity! And

Take me seven times over

add a fifty! You still

To reach a triple century

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.