



SpeedLabs

MATHS

CBSE 7th

TEEVRA EDUTECH PVT. LTD.

Simple Equations

Exercise-4.4

Q.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 $\frac{5}{2}$ of the number, the result is 23.

Sol: (a) Let the number be x .

8 times of this number = $8x$

$$8x + 4 = 60$$

$$8x = 60 - 4 \text{ (Transposing 4 to R.H.S.)}$$

$$8x = 56$$

Dividing both sides by 8,

$$\frac{8x}{8} = \frac{56}{8}$$

$$x = 7$$

(b) Let the number be x .

One-fifth of this number = $\frac{x}{5}$

$$\frac{x}{5} - 4 = 3$$

$$\frac{x}{5} = 3 + 4 \text{ (Transposing } -4 \text{ to R.H.S.)}$$

$$\frac{x}{5} = 7$$

Multiplying both sides by 5,

$$\frac{x \times 5}{5} = 7 \times 5$$

$$x = 35$$

(c) Let the number be x .

Three-fourth of this number = $\frac{3x}{4}$

$$\frac{3x}{4} + 3 = 21$$

$$\frac{3x}{4} = 18 \text{ (Transposing 3 to R.H.S.)}$$

Multiplying both sides by 4,

$$\frac{3x \times 4}{4} = 18 \times 4$$

$$3x = 72$$

Dividing both sides by 3,

$$\frac{3x}{3} = \frac{72}{3}$$

$$x = 24$$

(d) Let the number be x .

Twice of this number = $2x$

$$2x - 11 = 15$$

$$2x = 15 + 11 \text{ (Transposing } -11 \text{ to R.H.S.)}$$

$$2x = 26$$

Dividing both sides by 2,

$$\frac{2x}{2} = \frac{26}{2}$$

$$x = 13$$

(e) Let the number of books be x .

Thrice the number of books = $3x$

$$50 - 3x = 8$$

$$-3x = 8 - 50 \text{ (Transposing } 50 \text{ to R.H.S.)}$$

$$-3x = -42$$

Dividing both sides by -3 ,

$$\frac{-3x}{-3} = \frac{-42}{-3}$$

$$x = 14$$

(f) Let the number be x .

$$\frac{x+19}{5} = 8$$

Multiplying both sides by 5,

$$\frac{(x+19) \times 5}{5} = 8 \times 5$$

$$x + 19 = 40$$

$$x = 40 - 19 \text{ (Transposing } 19 \text{ to R.H.S.)}$$

$$x = 21$$

(g) Let the number be x .

$$\frac{5}{2} \text{ of this number} = \frac{5x}{2}$$

$$\frac{5x}{2} - 7 = 23$$

$$\frac{5x}{2} = 23 + 7 \text{ (Transposing } -7 \text{ to R.H.S.)}$$

$$\frac{5x}{2} = 30$$

Multiplying both sides by 2,

$$\frac{5x \times 2}{2} = 30 \times 2$$

$$5x = 60$$

Dividing both sides by 5,

$$\frac{5x}{5} = \frac{60}{5}$$

$$x = 12$$

Q.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 shorts of a double century. How many runs did each one score?

Sol: (a) Let the lowest score be l .

$$2 \times \text{Lowest marks} + 7 = \text{Highest marks}$$

$$2l + 7 = 87$$

$$2l = 87 - 7 \text{ (Transposing 7 to R.H.S.)}$$

$$2l = 80$$

Dividing both sides by 2,

$$\frac{2l}{2} = \frac{80}{2}$$

$$l = 40$$

Therefore, the lowest score is 40.

(b) Let the base angles be equal to b .

The sum of all interior angles of a triangle is 180° .

$$b + b + 40^\circ = 180^\circ$$

$$2b + 40^\circ = 180^\circ$$

$$2b = 180^\circ - 40^\circ = 140^\circ \text{ (Transposing } 40^\circ \text{ to R.H.S.)}$$

Dividing both sides by 2,

$$\frac{2b}{2} = \frac{140^\circ}{2}$$

$$b = 70^\circ$$

Therefore, the base angles of the triangle are of 70° measure.

(c) Let Rahul's score be x .

Therefore, Sachin's score = $2x$

Rahul's score + Sachin's score = $200 - 2$

$$2x + x = 198$$

$$3x = 198$$

Dividing both sides by 3,

$$\frac{3x}{3} = \frac{198}{3}$$

$$x = 66$$

Rahul's score = 66

Sachin's score = $2 \times 66 = 132$