

Algebra

Question 1. Jane spent \$42 for shoes. This was \$14 less than twice what she spent for a blouse. How much was the blouse?

Solution

$$2x - 14 = 42$$

$$2x = 42 + 14$$

$$2x = 56$$

$$x = 28$$

$$x = 28$$

The price of blouse was
28 rupees

Question

Ng

There are b boys in the class
This is three times more than
Four times the number of girls
How many girls are in the class?

Solution

$$4x + 3 = b$$
$$4x = b - 3$$
$$x = (b - 3) / 4$$

This is the linear equation
it is not on number because
the given value is a number.
it is common algebra.

Question No 3

The whole is equal to the
sum of the parts. The sum
of two numbers is 84, and
one of them is 12 more than
the other. What are the two
numbers?

Solution

$$x(x+12) = 84$$

$$2x + 12 = 84$$

$$2x = 84 - 12$$

$$2x = 72$$

$$x = \frac{72}{2}$$

$$x = 36 \quad \left\{ \begin{array}{l} \text{First number} \\ \text{is } 36 \end{array} \right.$$

To find the second number,
12 is added into 36.

$$36 + 12 = 48$$

The sum of $36 + 48 = 84$

Q47

The sum of two consecutive numbers is 37. What are they?

Solution

Attempt by giving statements

$$\begin{aligned}x + (x+1) &= 37 \\2x + 1 &= 37 \\2x &= 37 - 1 \\2x &= 36 \\x &= \frac{36}{2} = 18\end{aligned}$$

$$x = 18$$

Then the two consecutive is 18 and 19

Q#5 one number is 10 more than other. The sum of twice the smaller plus three times the larger is 55. What are the two numbers?

Solution

$$2x + 3(x+10) = 55$$

$$2x + 3x + 30 = 55$$

$$5x = 55 - 30$$

$$5x = 25$$

$$x = \frac{25}{5}$$

$$x = 5$$

The 5 is smaller number. Then the 15 is larger than 10

Divide \$80 among three people
so that the second will have
twice as much as the first
and the third will have \$5
less than the second.

$$x + 2x + (2x - 5) = 80$$

$$3x + 2x - 5 = 80$$

$$5x - 5 = 80$$

$$5x = 80 + 5$$

$$5x = 85$$

$$x = \frac{85}{5}$$

$$x = 17$$

$$2x = 17$$

The sum of two consecutive odd
Number is 52. what are
the odd^{two} numbers?

$$x + (x + 2) = 52$$

$$2x + 2 = 52$$

$$2x = 52 - 2$$

$$2x = 50$$

$$x = \frac{50}{2} = 25$$

$$x + 2 = 25 + 2 = 27$$

The two consecutive numbers
are 25, 27

The cost of 3 tables and
8 chairs is 4350 rupees
and cost of two table and
5 chairs is 2800 rupees.
Find one chair and Table Price.

Solution.

Cost of 3 tables = x

Cost of 8 chairs = y

$$3x + 8y = 4350 \quad \text{--- (1)}$$

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equation (1)

$$2x + 5y = 2800 \text{ (2)}$$

multiply the equation one with 2 and (2) with (3)

$$\begin{aligned} 2(3x) + 8y &= 4350 \\ 8x + 16y &= 8700 \text{ --- (3)} \end{aligned}$$

$$\begin{aligned} 2(2x + 5y + 2800) \\ 8x + 15y &= 8400 \end{aligned}$$

Divide the both equation

$$\begin{aligned} 8x + 16y &= 8700 \\ 8x + 15y &= 8400 \end{aligned}$$

$$y = 300$$

The price of one chair is 300

$$3x + 8(300) = 4350$$

$$3x + 2400 = 4350$$

$$3x = 4350 - 2400$$

$$3x = 1950$$

$$= 1950/3$$

Price of one table is

$$\boxed{650}$$

Sum of two numbers is 25. One of the numbers exceeds the other by 9. Find the numbers.

Solution

$$\text{Sum of two numbers} = 25$$

$$\text{Exceed num} = 9$$

$$\text{number} = x$$

Value of

$$x + (x + 9) = 25$$

$$2x + 9 = 25$$

$$2x = 25 - 9$$

$$2x = 16$$

$$\frac{2x}{2} = \frac{16}{2}$$

$$\boxed{x = 8}$$

Two small pictures and one large picture contain 8 cups of water. One large picture minus one smaller constituent 2 cups of water. How many cups of water each picture hold?

Solution

$$2x + y = 8 \quad \text{--- (i)}$$

$$2(x + y) = 8$$

$$x + y = 4$$

$$x + y = 4 \quad \text{--- (ii)}$$

The large constituent minus from small 2 cups

$$x + y = 4 - 2$$

$$x + y = 2 \quad \text{--- (iii)}$$

The contain 4 or 2 cups

Ayan is 5 years younger than Rahul and
4 years before twice what will
be present age of Ayan?

Solution

$$\text{Age of Ayan} = x + 5$$

$$\text{Rahul age} = (x + 4)$$

$$\text{it is twice} = 2(x + 4)$$

$$\text{Present} = 5$$

$$(x + 5) + 4 = (x + 4) \cdot 2$$

$$x + 9 = 2x + 8$$

$$x + 9 = 2x + 8$$

$$9 - 8 = 2x - x$$

$$1 = x$$

$$\boxed{x = 1}$$

The age of Ayan $x + 5$

$$x + 5 = 0$$

$$x + 5 = 6$$

The present age of Ayan is

$$6$$