

③

Exercise-14B1. let the number = x

so, According to the question (ATQ)

$$\frac{3}{7} \text{ of } x = 12.$$

$$\Rightarrow \frac{3x}{7} = 12.$$

$$\Rightarrow x = \frac{7 \times 12}{3}$$

$$\Rightarrow x = 28.$$

2. let the number = x .

$$\therefore \text{ATQ, } x + 9 = 43$$

$$\Rightarrow x = 43 - 9$$

$$\Rightarrow x = 34$$

3. let the number = x

$$\therefore \text{ATQ, } x - 11 = 57.$$

$$\Rightarrow x = 57 + 11$$

$$\Rightarrow x = 68.$$

Q.4. let the number = x

$$\text{ATQ, } 3x + 9 = 39$$

$$\Rightarrow 3x = 39 - 9$$

$$\Rightarrow 3x = 30$$

$$\Rightarrow x = 10.$$

Q.5. let the no. = x .

$$\text{ATQ, } \frac{3}{4}x - \frac{1}{3}x = 15$$

$$\Rightarrow \frac{9x - 4x}{12} = 15$$

$$\Rightarrow \frac{5x}{12} = 15 \Rightarrow x = \frac{15 \times 12}{5} = 36.$$

⑤ let the no. = x

$$A + Q, \frac{x}{4} = x - 21$$

$$\Rightarrow x = 4(x - 21)$$

$$\Rightarrow x = 4x - 84$$

$$\Rightarrow 84 = 4x - x$$

$$\Rightarrow 84 = 3x$$

$$\Rightarrow x = 28.$$

Q. ⑦ let the no. = x

$$A + Q, x - 36 = 86 - x$$

$$\Rightarrow 2x = 86 + 36$$

$$\Rightarrow 2x = 122$$

$$\Rightarrow x = 61$$

⑧ let the no. = x

$$A + Q, x - \frac{4}{7}x = 18$$

$$\Rightarrow \frac{7x - 4x}{7} = 18$$

$$\Rightarrow 3x = 18 \times 7$$

$$\Rightarrow x = \frac{18 \times 7}{3}$$

$$\therefore x = 42$$

⑨ let the no. = x

$$A + Q, x - 20 + 56x = 40$$

$$\Rightarrow x - \frac{20}{100}x = 40$$

$$\Rightarrow x - \frac{x}{5} = 40$$

$$\Rightarrow \frac{5x - x}{5} = 40$$

$$\Rightarrow 4x = 40 \times 5 \Rightarrow x = 50.$$

(10) let the no. = x

$$\text{A.T.Q, } 4x + 10 = 5x - 5$$

$$\Rightarrow 4x - 5x = -5 - 10$$

$$\Rightarrow -x = -15 \Rightarrow x = 15$$

(11) let the no. = x .

$$\text{A.T.Q, } \left(\frac{1}{4}x + 7\right) \times 3 = 36$$

$$\Rightarrow \frac{x+28}{4} \Rightarrow \frac{3x}{4} + 21 = 36$$

$$\Rightarrow \frac{3x}{4} = 36 - 21$$

$$\Rightarrow x = \frac{15 \times 4}{3}$$

$$\Rightarrow x = 20.$$

(12) let the consecutive ^{odd} nos. are,
 x and $x+2$.

$$\text{A.T.Q, } x + x + 2 = 52$$

$$\Rightarrow 2x = 50 \Rightarrow x = 25.$$

(13) so other no. = $x+2 = 25+2 = 27$.

(14) let the three consecutive even nos. are,
 $x, x+2, x+4$.

$$\text{A.T.Q, } x + x + 2 + x + 4 = 48$$

$$\Rightarrow 3x + 6 = 48$$

$$\Rightarrow 3x = 42$$

$$\Rightarrow x = 14.$$

∴ the nos. are, $x = 14$

$$x + 2 = 14 + 2 = 16$$

$$x + 4 = 14 + 4 = 18.$$

(14) let one no. = x
so, the other no. = $x+9$

$$\therefore \text{ATQ, } 4x + 5 \times (x+9) = 108$$

$$\Rightarrow 4x + 5x + 45 = 108$$

$$\Rightarrow 9x = 63$$

$$\Rightarrow x = 7$$

\therefore the nos. are, $x = 7$
 $x+9 = 7+9 = 16$.

(15) Total no. of students = 40

let, no. of boys = x

\therefore no. of girls = $\frac{3}{5}x$.

$$\therefore x + \frac{3}{5}x = 40$$

$$\Rightarrow \frac{5x + 3x}{5} = 40$$

$$\Rightarrow 8x = 40 \times 5$$

$$\Rightarrow x = \frac{540 \times 5}{8}$$

= 25 ; no. of boys.

\therefore no. of girls = $\frac{3}{5} \times 25 = 15$

(16) let, breadth of the rect. park = x

\therefore length " " " " = $3x$

given, perimeter = 192 mt.

$$\Rightarrow 2(x+b) = 192$$

$$\Rightarrow 2(x+3x) = 192$$

$$\Rightarrow 8x = 192 \Rightarrow x = 24 \text{ m} = \text{breadth.}$$

\therefore length = $3 \times 24 = 72 \text{ mt.}$

(17) Let the 3rd side of the isosceles be x m.

\therefore The equal sides are $(2x-5)$ m $= (2x-5)$ m.

Now, Perimeter = 55 m.

$$\Rightarrow x + (2x-5) + (2x-5) = 55$$

$$\Rightarrow 5x - 10 = 55$$

$$\Rightarrow x = \frac{65}{5} = 13 \text{ m}$$

\therefore The equal sides are $= 2x - 5$

$$= 2 \times 13 - 5$$

$$= 26 - 5 = 21 \text{ m each.}$$

(18) Let one angle $= x^\circ$

So, its supplement $= 180^\circ - x^\circ$

$$\text{A.T.Q., } (180^\circ - x^\circ) - x^\circ = 44^\circ$$

$$\Rightarrow 180^\circ - 2x^\circ = 44^\circ$$

$$\Rightarrow 180^\circ - 44^\circ = 2x^\circ$$

$$\Rightarrow 136^\circ = 2x^\circ$$

$$\Rightarrow \frac{136^\circ}{2} = x^\circ \Rightarrow x^\circ = 68^\circ$$

\therefore Other angle $= 180^\circ - 68^\circ = 112^\circ$

(19) Let cost of 1 chair = Rs x .

\therefore " " 1 table = Rs $(x+40)$

$$\text{A.T.O., } 3 \times (x+40) + 2 \times x = 8745$$

$$\Rightarrow 3x + 120 + 2x = 8745$$

$$\Rightarrow 5x = 8625 \Rightarrow x = 1725$$

\therefore cost of 1 chair = Rs 1725

cost of 1 table = $1725 + 40 = \text{Rs } 1765$

(20) let the numerator = x
 \therefore denominator = $x+3$.

so, the fraction = $\frac{x}{x+3}$.

Now, ATO, $\frac{x+2}{x+3+5} = \frac{1}{2}$.

$$\Rightarrow \frac{x+2}{x+8} = \frac{1}{2}$$

$$\Rightarrow 2(x+2) = x+8$$

$$\Rightarrow 2x+4 = x+8$$

$$\Rightarrow 2x-x = 4 \Rightarrow x=4, \text{ Numerator}$$

$$\text{and Denominator} = x+3 = 4+3=7$$

\therefore the required fraction = $\frac{4}{7}$.

(21) let the present age of son = x years.

\therefore " " " " man = $2x$ yrs.

Now, 20 years ago, son was = $(x-20)$ yrs.

and, 20 yrs ago, man was = $(2x-20)$ yrs.

ATO, $2x-20 = 12x(x-20)$

$$\Rightarrow 2x-20 = 12x-240$$

$$\Rightarrow -20+240 = 12x-2x$$

$$\Rightarrow 220 = 10x \Rightarrow x = 22 \text{ yrs.}$$

so present age of son = 22 yrs.

and Present age of man = 2×22

$$= 44 \text{ yrs.}$$

24. Total is 184.

Let one part = x

∴ the other part = $184 - x$

$$\text{ATQ, } \frac{1}{3}x - \frac{1}{7}(184 - x) = 8$$

$$\Rightarrow \frac{x}{3} - \frac{184 - x}{7} = 8$$

$$\Rightarrow \frac{7x - 3(184 - x)}{21} = 8$$

$$\Rightarrow 7x - 552 + 3x = 8 \times 21$$

$$\Rightarrow 10x = 168 + 552$$

$$\Rightarrow x = \frac{720}{10} = 72, \text{ one part}$$

∴ other part = $184 - 72 = 112$

25) Given, total no. of notes = 90

Let, no. of Rs 5 notes = x .

∴ no. of Rs 10 notes = $90 - x$

$$\text{ATQ, } 5x + 10(90 - x) = 500$$

$$\Rightarrow 5x + 900 - 10x = 500$$

$$\Rightarrow \cancel{5x} = \cancel{400}$$

$$\Rightarrow x = 80, \text{ no. of 5-rupees notes}$$

∴ No. of 10-rupees notes = $90 - x$

$$= 90 - 80$$

$$= 10$$

26 Given, total no. of coins = 30

Let, no. of 50 paise coins = x

∴ " " 25 paise coins = $30 - x$

$$\text{ATQ, } x \times 50 + (30 - x) \times 25 = 11 \times 100 \text{ paise}$$

$$\Rightarrow 50x + 750 - 25x = 1100$$

$$\Rightarrow 25x = 350$$

$$\Rightarrow x = \frac{350}{25} = 14, \text{ no. of 50 paise coins.}$$

$$\text{No. of 25-paise coins} = 30 - 14 = 16.$$

27. Total no. of days the labourer engaged in work = 20 days.

Let, he remained absent = x days.

So, he remained present = $(20 - x)$ days.

Now, ATQ,

$$(20 - x) \times 280 - x \times 60 = 2540$$

$$\Rightarrow 5600 - 280x - 60x = 2540$$

$$\Rightarrow -340x = 2540 - 5600$$

$$\Rightarrow \cancel{-} 340x = \cancel{-} 3060$$

$$\Rightarrow x = \frac{3060}{340} = 9 \Rightarrow x = 9$$

So, for 9 days he remained absent.