

Question #1

PART A:

Find missing terms

i- 3, 9, 21, 39, 63, 93

$$3 \times 6 = 9$$

$$39 + 24 = 63$$

$$9 + 12 = 21$$

$$63 + 30 = 93$$

$$21 + 18 = 39$$

ii- 1, 5, 11, 21, 37, 63

$$5 - 1 = 4$$

$$11 = 26 + 37$$

$$11 - 5 = 6$$

$$= 63$$

$$21 - 11 = 10$$

$$37 - 21 = 16$$

$$x - 37 = 26$$

iii- 5, 16, 29, 46, 65, 88, 117

$$16 - 5 = 11$$

$$29 - 16 = 13$$

$$46 - 29 = 17$$

$$65 - 46 = 19$$

$$88 - 65 = 23$$

$$x - 88 = 29$$

difference is a prime number

$$x = 88 + 29$$

$$x = 117$$

iv- 1, 3, 4, 9, 27, 36, 243, 180, 972

$$1, 4, 27, 243, 972$$

$$3, 9, 36, x$$

$$3 \times 3 = 9$$

$$9 \times 4 = 36$$

$$36 \times 5 = 180$$

$$x \longrightarrow x$$

PART B:

Code Language Problem.

KENWOOD

PANASONIC

RRGWICL

WNGANCVRP

$$K + 7 = R$$

$$P + 7 = W$$

continuing the sequence

$$E + 13 = R$$

$$A + 13 = N$$

$$I + 7 = P$$

$$N - 7 = G$$

$$N - 7 = G$$

$$C + 13 = P$$

$$W + 0 = W$$

$$A + 0 = A$$

$$O - 6 = I$$

$$S - 6 = N$$

$$O - 12 = C$$

$$O - 12 = C$$

$$D + 8 = L$$

$$N + 8 = V$$

path hence his distance from starting point will be

PART C:

According to given statement,

A, B, C, D, E $\rightarrow$ sitting on bench

i - A $\longleftrightarrow$ B (sitting next to each other)

ii - C $\longleftrightarrow$ D (sitting next to each other)

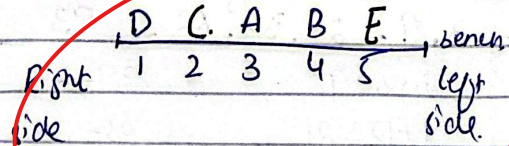
iii - D $\neq$ E

$\rightarrow$ iv - E $\rightarrow$ left end of bench.

$\rightarrow$ v - C $\rightarrow$ 2nd position.

vi - A $\rightarrow$ right of B & E

vii - A $\longleftrightarrow$ C (adjacent)



Position of A = 2nd position on the bench.
X ——— X

PART D:

As per given statement,

B is A's son i.e.

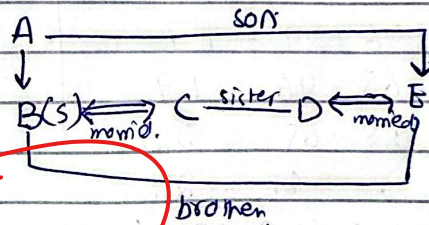
B is married to C

D is sister of C

D is married to E

B is brother of E

E is son of A, Hence D is daughter-in-law of A.



X = X

QUESTION # 2

PART A:

According to given statement, let age of Rashid be x.

Age of Rashid = x

Age of father = F = 3R = 3x

After eight yr.

$$F+8 = 2 + \frac{1}{2} (R+8)$$

putting values.

$$3x + 8 = 2 + \frac{1}{2} (x+8)$$

$$3x + 8 = 2 + \frac{x+8}{2}$$

$$3x+8 = \frac{2 \times 2}{1 \times 2} + \frac{x+8}{2}$$

Taking LCM = 2

$$3x+8 = \frac{4}{2} + \frac{x+8}{2}$$

$$3x+8 = \frac{4+x+8}{2}$$

$$3x+8 = \frac{x+12}{2}$$

$$\text{or } 2(3x+8) = x+12$$

$$6x+16 = x+12$$

$$6x-x = 16+12$$

$$5x - x + 8 = 2-8$$

$$\frac{5x-x+8}{2} = -6$$

Taking 2 as LCM.

$$5x+8 = -12$$

$$5x = -12-8$$

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

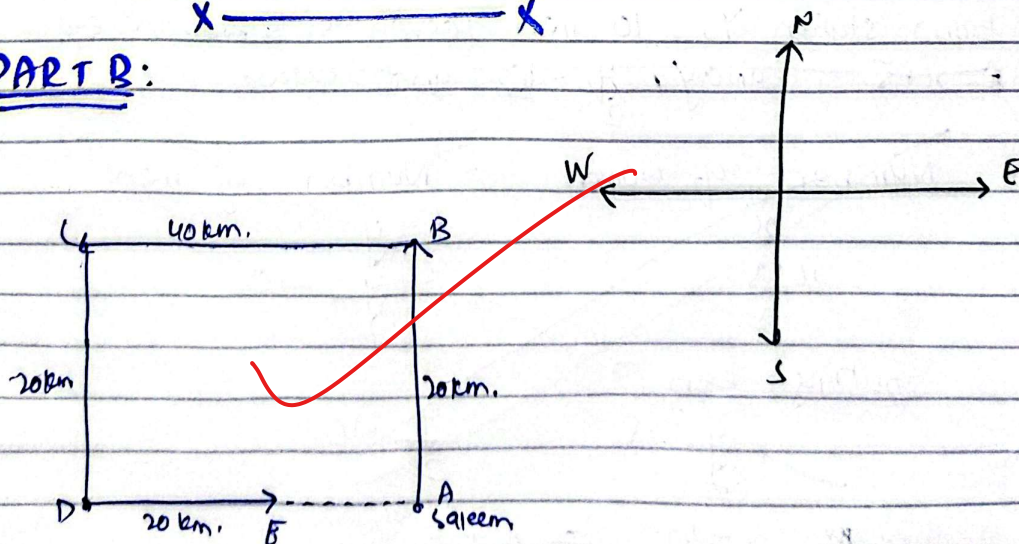
age cannot be in

$$5x = -4$$

$$x = \frac{-4}{5} = \text{age can never be in minus}$$

x ————— x

PART B:



How far is he from starting point.

As from diagram, Saleem has moved in a squared path hence his distance from starting point will be

$$\overline{BC} = \overline{AD}$$

$$40 \text{ km} = 40 \text{ km}$$

His final location $= \overline{DE} = 20 \text{ km}$.

$$\begin{aligned} \text{Distance from starting point} - \overline{EA} &= \overline{AD} - \overline{DE} \\ &= 40 - 20 = 20 \text{ km} \end{aligned}$$

Saleem is 20 km away from starting point.

How much path he had travelled.

$$\begin{aligned} \text{Total distance travelled by Saleem} &= \overline{AB} + \overline{BC} + \overline{CD} + \overline{DE} \\ &= 20 + 40 + 20 + 20 \\ &= 100 \text{ km} \end{aligned}$$

Hence Saleem travelled 100 km.

In which direction is he moving?

According to diagram, Saleem is moving towards East.

In which he is from initial position.

Saleem is in the West from initial position according to diagram.

PART C:

According to question, from station X, bus has number of women half of that of men. Let number of women be 'x' and 'y' be that of men. So,

$$x = \frac{y}{2} \quad \text{--- (1)}$$

From station Y, 10 men leave & 5 women enter it.
 ~~$x = x + 5$ and $y = y - 10$ and about~~

~~Number of women = Number of men.~~

~~$$\begin{aligned} x &= y \\ x + 5 &= \frac{y}{2} - 10 \end{aligned}$$~~

~~putting eqn (1)~~

~~$$\frac{y}{2} + 5 = \frac{y}{2} - 10$$~~

~~$$y - 10 = x + 5$$~~

~~$$y - 10 = \frac{y}{2} + 5$$~~

~~$$y - \frac{y}{2} = 10 + 5$$~~

~~$$\frac{2y - y}{2} = 15$$~~

$$y = 15 \times 2$$

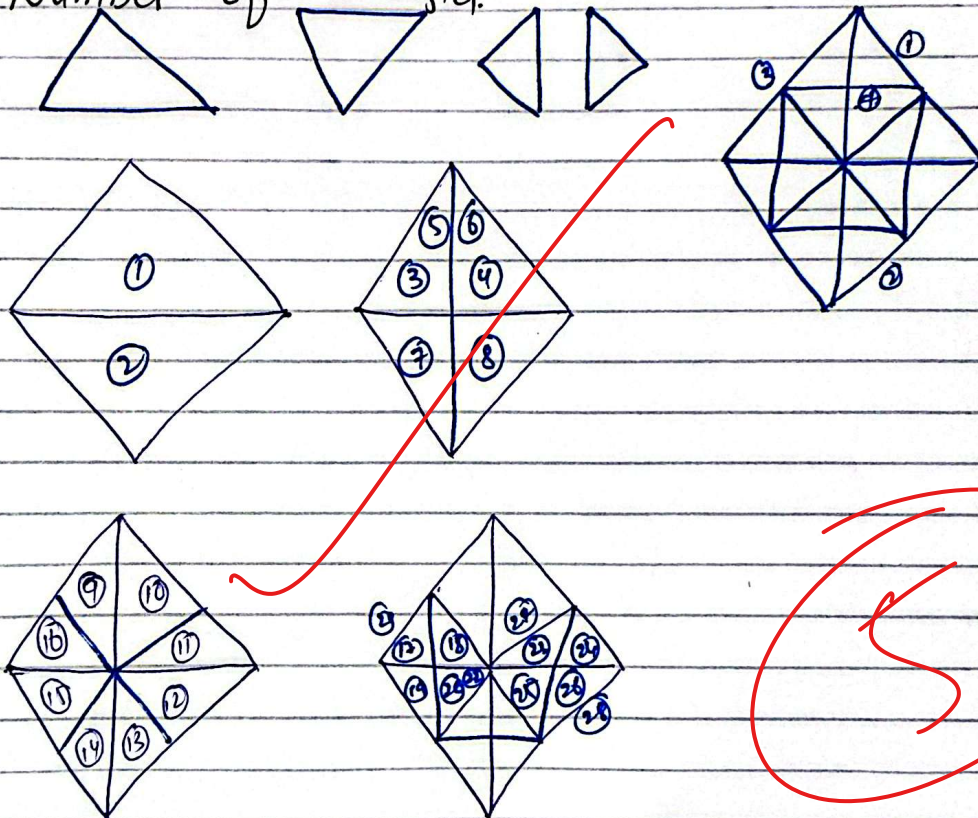
$$y = 30$$

so Number of men = 30
and Number of women = $\frac{y}{2} = \frac{30}{2} = 15$

Total no. of passengers will be $30 + 15 = 45$.

PART D:

Number of triangles.



Total number of triangles = 28.

X ————— X