

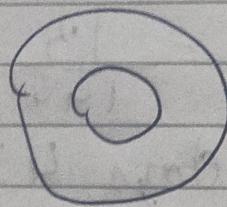
$$Q_{11}) \quad \frac{d}{32} + \frac{d}{6} = 4.75$$

$$\frac{3d + 16d}{96} = 4.75$$

$$\frac{19d}{96} = 4.75$$

$$d = 24 \text{ cm}$$

Q22)



$$2\pi r_1 - 2\pi r_2 = 572$$

$$2\pi(r_1 - r_2) = 572$$

$$\pi(r_1 - r_2) = 286$$

$$(r_1 - r_2) = 91$$

Q23)

$$9, 11, 2, 21, 63, 256$$

$$\begin{array}{r} 9+1=10 \\ 10 \times 2=20 \\ 20 \times 3+3=63 \\ 63 \times 4+4=256 \\ 256 \times 5+5=\underline{\underline{1285}} \end{array}$$

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Q25)

$$\frac{1}{24} + \frac{1}{31} + \frac{1}{48} = \frac{144}{144} - \frac{13}{144} \times \frac{4}{36}$$

Q 4) Rows of 60 boys  
New place

New	Old	Surya
Arun		
17	24	29

$$\text{so from night} = 60 - 29 + 1 = 32 \text{ hours}$$

night

Q5)  $\frac{1}{24} + \frac{1}{36} + \frac{1}{48} = \frac{13}{144}$

(working only 4 days)  $4 \times \frac{1}{48} = \frac{1}{12}$

Remaining work =  $1 - \frac{1}{12} = \frac{11}{12}$

Let total time =  $T$  days.

So A worked  $(T-3)$  days, B worked  $T$  days

$$\frac{(T-3)}{24} + \frac{T}{36} = \frac{11}{12}$$

$\text{Lcm} = 72$

$$\frac{9(T-3)}{72} + \frac{2T}{72} = \frac{11}{12}$$

$$\frac{5T-9}{72} = \frac{11}{12}$$

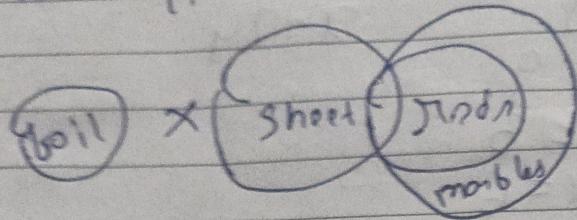
$$5T - 9 = 66$$

$$T = 15$$

So total days =  $15 + 4 = 19$  days

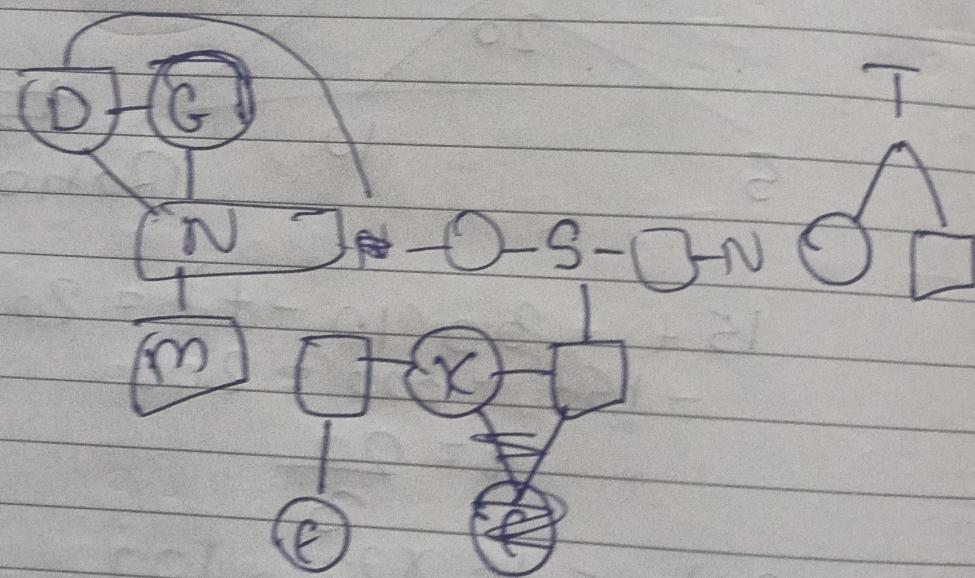
9

Q6) If some sheet are stuck



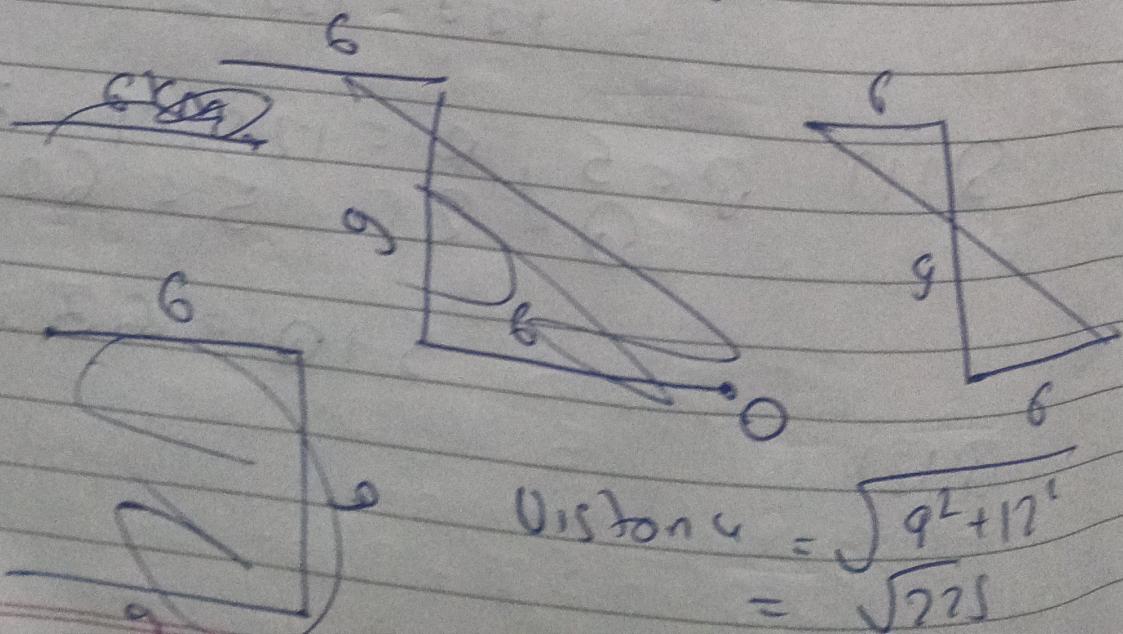
- 1) Not given
- 2) Possibly
- 3) Not true
- 4) ~~True~~ Cannot conclude
- 5) Only II follow

Q7



$\Rightarrow N$  is son of G

Q8



$$\text{Distance} = \sqrt{9^2 + 17^2}$$
$$= \sqrt{225}$$

Q9

$$x + y = 9$$

$$3y = 9$$

$$y = 3$$

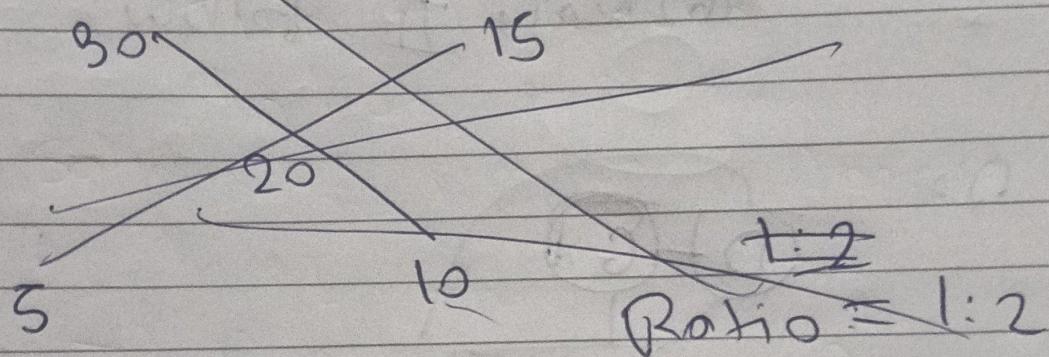
$$x = 6$$

$$x = 74$$

Two digit number = 63

Q10)

~~20 km/hr~~



$$15t + 30(10 - t) = 200$$

$$-15t + 300 = 200$$

$$t = \frac{20}{3}$$

$$\text{Auto} = 15 \times \frac{20}{3} = 100$$

$$\text{Car} = 200 - 100 = 100$$

$$100 : 100 \approx 1:1$$

Q11)

$$\frac{P}{Q} = \frac{5}{25}, R = 125, T = 3125$$

$$5 + Q = 630$$

Q12)

$$Q_{12} \text{ Alloy A: } 6 \text{ kg Lead : Tin } = 1:3 \\ \text{Tin} = 6 \times \frac{3}{4} = 4.5 \text{ kg}$$

$$\text{Alloy B: } 8 \text{ kg, Tin : Copper } = 2:3 \\ \text{Tin} = 8 \times \frac{2}{5} = 3.2$$

$$\text{Total Tin} = 4.5 + 3.2 = 7.7 \text{ kg}$$

$$Q_{13} \text{ Avg Sum} = 26 \times 36 \\ \text{original} = 900$$

$$\begin{array}{r} 3 \\ 2 \\ \times 36 \\ \hline 150 \\ 72 \\ \hline 750 \end{array}$$

$$\text{New sum} = 24 \times 38 \\ = 912$$

$$\begin{array}{r} 2900 \\ 27 \\ \times 37 \\ \hline 189 \\ 810 \\ \hline 999 \end{array}$$

$$\text{Sum of 2 students} = 9988$$

$$\text{Avg} = \frac{9988}{2} = 4994$$

$$Q_{14} \text{ Alloy A} = 4000$$

$$\text{B alloy} = 5000$$

$$\text{Ratio: } 4:5$$

$$\frac{4}{5} = \frac{432}{?}$$

$$\begin{array}{r} 672 \\ -240 \\ \hline 432 \end{array}$$

$$\text{Total B} = \frac{4}{9} \times 972 = 432$$

$$\text{Avg} = 972$$

$$\text{B alloy} = \frac{5}{9} \times 972 = \frac{5}{9} \times 972 \\ = 540$$

Q15)

Aditya, Sohil, Ananya, Anshilco,  
Ankur, Tiyo, Rshit, Kovya.

January, April, September, December

DOB: 22 or 28

Aditya - 20 days

Kovya  $\Rightarrow$

Tiyo  $\Rightarrow$  Kovya

Ankur = 27<sup>th</sup> April

Sohil 2 seminars Ananya  
Anuradha Sahil and Ananya  
before Ankur

Ananya  $\Rightarrow$  Rshit

Kovya = On

Ananya & Tiyo same date  
not in September

216 1

Q12)

$$40 + 30 = 70$$

$$35 - 1 = 70$$

$$150 - 1 = ?$$

Maximum marks = 200

Q18)

50-l. income on household  
item

22.5 entertainment 25-l. on  
5-l. on sports transport

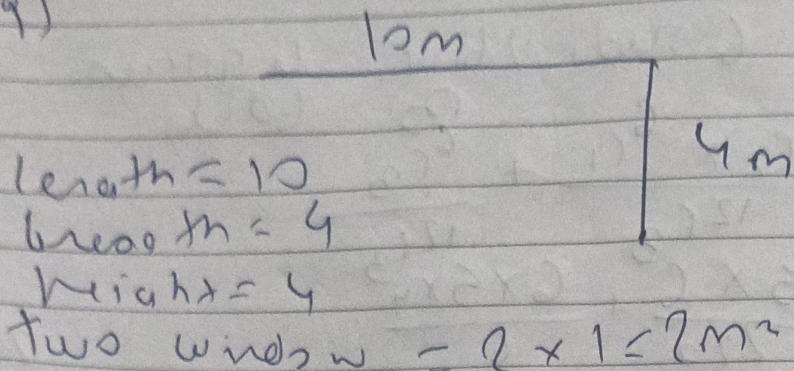
Remaining = 900

$$92.5 \cancel{+ 2.5} x + 900 = 1000 - 15$$

$$900 = \cancel{22.5} x$$

$$x = \frac{4000}{12000}$$

19)



$$\text{two windows} = 2 \times 1 = 2 \text{ m}^2$$

$$\text{and } 3 \times 2 = 6 \text{ m}^2, \text{ so total window area} = 8 \text{ m}^2$$

$$\text{Two walls of size} = 10 \times 4 = 40 \text{ m}^2$$

so in - total = 8 m<sup>2</sup>

$$\text{Two walls of size} = 4 \times 4 = 16 \text{ m}^2$$

so total = 32 m<sup>2</sup>

$$\text{Total wall area} = 8 + 32 = 40 \text{ m}^2$$

$$\text{Area to be papered} = 40 - 8 = 32 \text{ m}^2$$

$$\text{Paper width} = 50 \text{ cm} = 0.5 \text{ m}$$

$$\text{Length of paper needed} = \frac{154}{0.5} = 308$$

$$\text{Cost of paper} (\text{m} = 208 \times 1) \\ = 52$$

Q20)

$$\frac{4x+13}{5x+18} = \frac{11}{13}$$

$$52x + 195 = 55x + 165$$

$$3x = 30$$

$$x = 10$$

$$40 + 50 + 60 = 150$$

$$\begin{array}{r} 15 \\ \times 13 \\ \hline 45 \\ 150 \\ \hline 195 \end{array}$$

Q21)

68  $\Rightarrow$  all other sc from  
addition of adjacent.

Q22) 6 red, 9 blue, 4 green

$$\frac{6C_2 \times {}^6C_1}{12C_3} + \frac{{}^6C_3}{12C_3}$$
$$\frac{15 \times {}^6C_3}{220} + \frac{6 \times 5 \times {}^3C_3}{220}$$

$$\frac{210}{1320} \times \frac{1}{6}$$

$$\frac{90 + 20}{220} = \frac{1}{2}$$

Q23) Q5 Total

$$12 = n(A \cup B)$$

$$14 = |B| + |A|$$

$$10 = |B \cap A|$$

$$P(C_{UF}) = 16$$

$$P(C \cap (U \cup F)) \approx 25 - 16 = 9$$

Q24)  $\frac{1}{12} + \frac{1}{13} + \frac{1}{20} = \frac{10 + 8 + 6}{120}$

A is 1st hour B + C is 2nd hour  $\frac{1}{12} + \frac{1}{13}$

$$\frac{1}{12} + \frac{1}{13} = \frac{3}{20}$$

2nd hour A + C

$$\frac{1}{12} + \frac{1}{20} = \frac{2}{15}$$

$$\text{Total in hours} = \frac{17}{60}$$

(Assuming 3 cycle or near to 60)

$$3 \text{ cycle} = \frac{51}{60}$$

$$\text{Remaining} = \frac{9}{60} = \frac{3}{20}$$

$$7^{\text{th}} \text{ hr. } (A+B) = \frac{3}{20}$$

$$t_{\text{total}} = \text{time} = 3/20$$

Q25

$$54 \times \frac{65x}{100} = 351$$

$$= 351 - 75 - 86$$

$$351 - 161$$

$$\cancel{230} = 190$$

$$\begin{array}{r}
 & 22 \\
 & 54 \\
 \times & 6.5 \\
 \hline
 & 270 \\
 & 3240 \\
 \hline
 & 3510 \quad 75 \\
 & + 050 \\
 \hline
 & 8 \quad 75 \\
 & 1198 \quad + 4 \\
 \hline
 & 13 \quad 75 \\
 & + 86 \\
 \hline
 & 181
 \end{array}$$

Q26) 3, 6

$$Q + E - A$$

$$69 - 65$$

$P + Y$  = odd sum of  $\{4\}$  i.e. starting  
at 2029  
Output: 2024

Q27) Finding maximum number  
116

Q28) which is 8

$$\begin{array}{r}
 1+2+3+\cancel{4}+\cancel{5} \\
 + 6+7+8+9+
 \end{array}$$

$$\text{Sum} = 35$$