

Date: 09-01-2024

Part-II GSA Mock 8  
Section-II

~~Q 6~~ Past

Q 6.a Let age of Father =  $x$   
Let age of Son =  $y$

Past (5 years ago)

$$\cancel{3y = x} \quad 3y - 5 = x - 5$$

Present

$$x = ? \quad y = 30$$

Put  $y = 30$  in Past expression

$$\cancel{3y = x}$$

$$3y - 5 = x - 5$$

$$\cancel{3(30) = x}$$

$$3(30) - 5 = x - 5$$

90

$$90 - 5 + 5 = x$$

$$\boxed{90 \text{ years} = x}$$

Current

Age of Father is 90 years

Q 6.b. Mean = 10, 30,  $y$ , 50 = 50

$$\frac{10 + 30 + y + 50}{4} = 50$$

$$\frac{90 + y}{5} = 50$$

$$90 + y = 200$$

$$y = 200 - 90$$

$$\boxed{y = 110}$$

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Q6c.i. 2, 6, 18, 54, \_\_\_\_\_  
4    12    36

Differences are being multiplied by 3 so;

$$4 \times 3 = 12$$

$$12 \times 3 = 36$$

$$36 \times 3 = 108$$

So next term will be  $108 + 54$

$$108 + 54 = 162$$

Answer = 2, 6, 18, 54, 162

Q6c.ii. 3125, 256, \_\_\_\_\_, 4, 1

•  $3125 = 5 \times 5 \times 5 \times 5 \times 5 = 5^5$

•  $256 = 4 \times 4 \times 4 \times 4 = 256 = 4^4$   
16    64    256

•  $4 = 2 \times 2 = 2^2$

•  $1 = 2^0 = 1$

So, middle value is  $3^3$

as order is  $n$

$$3^3 = 3 \times 3 \times 3$$

$$3^3 = 9 \times 3 = 27$$

Missing term is 27

$$\begin{array}{r} 625 \\ 5 \overline{) 3125} \\ \underline{-30} \end{array}$$

$$\begin{array}{r} \times 125 \\ \underline{-10} \\ \times 25 \\ \underline{-25} \\ \times \end{array}$$

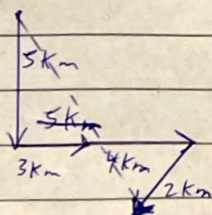
$$\begin{array}{r} 125 \\ 5 \overline{) 625} \\ \underline{-5} \end{array}$$

$$\begin{array}{r} \times 25 \\ \underline{-10} \\ \times 25 \\ \underline{-25} \\ \times \end{array}$$

$$\begin{array}{r} 25 \\ 5 \overline{) 125} \\ \underline{-10} \\ \times 25 \\ \underline{-25} \\ \times \end{array}$$

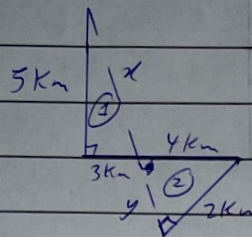
$$5 \times 5 = 25$$

Q8.



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Q8a. Drawn plain



Pythagoras theorem on Triangle 1

$$5^2 + 3^2 = x^2$$

$$25 + 9 = x^2$$

$$\sqrt{34} = x$$

Pythagoras theorem on Triangle 2

$$2^2 = 4^2 + y^2$$

$$2^2 + y^2 = 4^2$$

$$4 = 16 + y^2$$

$$4 + y^2 = 16$$

$$y^2 = 12$$

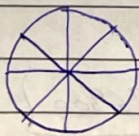
$$y = \sqrt{12}$$

Whole length =  $x + y$

$$= \sqrt{34} + \sqrt{12}$$

$$\text{Ans} = \sqrt{34} + \sqrt{12}$$

Q8. (b)



Total slices = 8

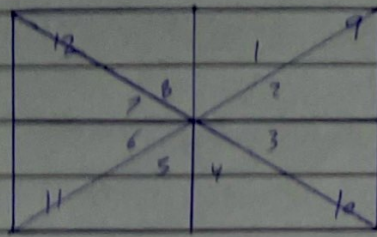
Slices with raspens = 3

Probability =  $\frac{\text{No. of favourable outcomes}}{\text{No. of total outcomes}}$

$$P = \frac{3}{8}$$

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Q8.c



No. of Triangles = 12

Q8.d IQ is the abbreviation of Intelligent Quotient. It is a scale that measures intelligence with respect to mental age (current age). It depends on several factors like age, genetics, stability of environment around individual. It can be enhanced to some point by playing games designed for psychological testing.

Q7.a Scooty 1 = Rs. 96000

Scooty 2 = Rs. 96000

$$\text{1st Scooty} = \frac{96000 \times 20}{100} = 9600 \times 2 = \text{Rs. } 19200$$

$$\text{Profit} = \text{Rs. } 96000 + \text{Rs. } 19200 = \text{Rs. } 115200$$

$$\text{2nd Scooty} = \frac{96000 \times 20}{100} = \text{Rs. } 19200$$

$$\text{Loss} = \text{Rs. } 96000 - \text{Rs. } 19200 = \text{Rs. } 76800$$

$$\text{Total value} = 76800 + 115200 = \text{Rs. } 192000$$

$$\text{Expected value} = 96000 + 96000 = \text{Rs. } 192000$$

$$\text{Difference} = \text{Rs. } 0$$

∴ There is no <sup>net</sup> Profit or Loss

96000	96000
	-19200
	<u>76800</u>
+96000	<del>76800</del>
<u>192000</u>	<u>+115200</u>
	115200
	+76800
	<u>192000</u>

Date: \_\_\_\_\_

Q7b.	Men	Days	Hours/Day	
	↑ 195	↓ 20	↓ 10	$\frac{265}{\times 40}$
	x	↓ 15	↓ 13	$\frac{00}{+ 260 \times}$
				<u>2600</u>

$$\frac{x}{195} = \frac{20}{15} \times \frac{10^2}{13}$$

$$x = \frac{40}{39} \times 195$$

$$x = \frac{40 \times 65}{13} = \frac{2600}{13}$$

$$x = 200 \text{ Men}$$

Q7c.  $U = \{a, b, c, \dots, z\} \rightarrow$  English Alphabets

$A = \{a, e, i, o, u\} \rightarrow$  Vowels

$A' = U - A \rightarrow$  Consonants

Ans =  $A' = \{b, c, d, f, g, h, j, k, l, m, n, p, q, r, s, t, v, w, x, y, z\}$

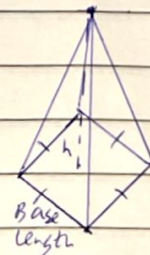
Ans = Consonants

Q7d. Volume =  $\frac{(\text{Base length})^2 \times \text{height}}{3}$

$$372 \text{ cm}^3 = \frac{a^2 \times 300000 \text{ cm}}{3}$$

$$1116 = a^2 \times 300000$$

$$\sqrt{\frac{1116}{300000}} = a$$



$$\frac{2372}{\times 3} = 1116$$

$$2a = a + a = 2 \sqrt{\frac{116}{300000}}$$