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SB-OB-53

Date: 09-01-2024

Part-II   GSA   Mock 8
Section-II

Q×6. Past

Q6.a let age of Father = x
let age of Son = y

Past (5 years ago)

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

Present

$x = ?$ $y = 30$

Put $y = 30$ in Past expression

$3y = x$ $3y - 5 = x - 5$
$3(30) = x$ $3(30) - 5 = x - 5$
90 $90 - 5 + 5 = x$
                   $\boxed{90 \text{ years} = x}$

Current
∴ Age of Father is 90 years

Q6 b.   Mean = $10, 30, Y, 50 = 50$

$\dfrac{10 + 30 + Y + 50}{4} = 50$

$\dfrac{90 + Y}{5} = 50$

$90 + Y = 200$
$Y = 200 - 90$
$\boxed{Y = 110}$

Q6c.i. 2, 6, 18, 54, ___.

underbraces: 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

- $3125 = 5 \times 5 \times 5 \times 5 \times 5 = 5^5$
- $256 = 4 \times 4 \times 4 \times 4 = 256 = 4^4$

  underbraces: 16, 64, 256

- $\times 4 = 2 \times 2 = 2^2$
- $1 = 2^0 = 1$

So, middle value is 3^3

as order is n^n

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

Missing term is 27

Q8.

Right-side working:

$$\begin{array}{r} 625 \\ 5\overline{)3125} \\ -30 \\ \hline \times 125 \\ -10 \\ \hline \times 25 \\ -25 \\ \hline \times \end{array}$$

$$\begin{array}{r} 125 \\ 5\overline{)625} \\ -5 \\ \hline 125 \\ -10 \\ \hline \times 25 \\ -25 \\ \hline \times \end{array}$$

$$\begin{array}{r} 25 \\ 5\overline{)125} \\ -10 \\ \hline \times 25 \\ -25 \\ \hline \times \end{array}$$
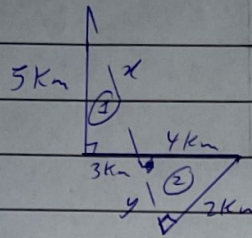
$$5 \times 5 = 25$$
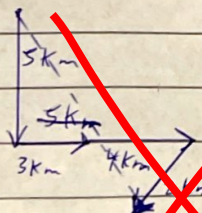
Q8a. Drawn plain

Pythagoras theorem on Triangle 1
$$5^2 + 3^2 = x^2$$
$$25 + 9 = x^2$$
$$\sqrt{34} = x$$

Pythagoras theorem on Triangle 2

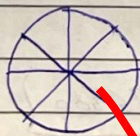|	
$2^2 = 4^2 + y^2$	$2^2 + y^2 = 4^2$
$4 = 16 + y^2$	$4 + y^2 = 16$
	$y^2 = 12$
	$y = \sqrt{12}$

Whole length = $x + y$
$$= \sqrt{34} + \sqrt{12}$$

$$\boxed{Ans = \sqrt{34} + \sqrt{12}}$$
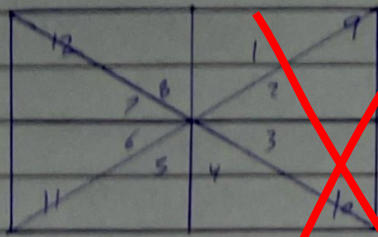
Q8. (b)

Total slices = 8
Slices with ratzens = 3

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

$$\boxed{P = \dfrac{3}{8}}$$

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 critical age (current age). It depends on several factors like age, genetics, stability of environment around individual. It can be enhanced to some part by playing games designed for Psychological testing.

Q7.a Scooty 1 = Rs. 96000
Scooty 2 = Rs. 96000

1st Scooty = $96000 \times \dfrac{2}{100}$ = 9600 × 2 = Rs. 19200

Profit = Rs 96000 + Rs. 19200 = ~~9200~~ Rs 115200

2nd Scooty = $96000 \times \dfrac{2}{100}$ = Rs. 19200

Loss = Rs. 96000 − Rs 19200 = Rs. 76800

Total value = 76800 + 115200
= Rs. 192000

Expected value = 96000 + 96000
= Rs 192000

Difference = Rs. 0
∴ There is no Profit or Loss

96000
−19200
76800
~~76800~~
+115200

115200
+76800
192000

96000
+96000
192000

Q7b.

Men	Days	Hours/Day
↑195	↓20	↓10
x	↓15	↓13

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

$$x = \frac{40 \times 195^{65}}{34_{13}}$$

$$x = \frac{40 \times 65}{13} = \frac{2600^{200}}{13_1}$$

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

$$\begin{array}{r} {}^{2}65 \\ \times 40 \\ \hline 00 \\ +260x \\ \hline 2600 \end{array}$$

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

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

$A' = U - A \rightarrow$ Consonents

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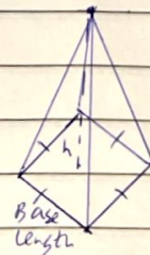
$Ans = Consonents$

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

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

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

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

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

$$\begin{array}{r} {}^{2}372 \\ \times\ 3 \\ \hline 1116 \end{array}$$

Base length