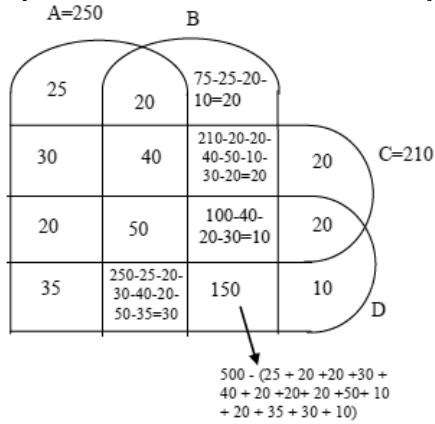


QNo:- 28 ,Correct Answer:- 10

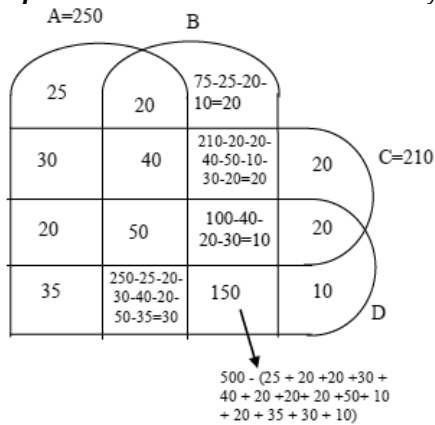
Explanation:- From instruction we can say that these are 500 patients in treatment group and 500 patients in control group.



10

QNo:- 29 ,Correct Answer:- 150

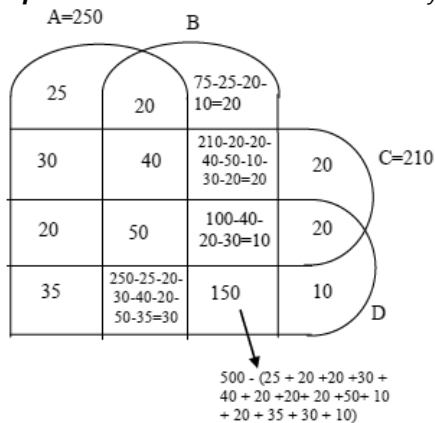
Explanation:- From instruction we can say that these are 500 patients in treatment group and 500 patients in control group.



150

QNo:- 30 ,Correct Answer:- 325

Explanation:- From instruction we can say that these are 500 patients in treatment group and 500 patients in control group.



$20 + 50 + 10 + 20 + 35 + 30 + 150 + 10 = 325$

QNo:- 31 ,Correct Answer:- A

Explanation:- Given that each institute have contract with two vendors
From I, II, and III facts given, we have

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
X	X	X	X	X	X				
Y									Y
		W							
		W							

From the IV fact, we can say in 2012 there are five contracts. This means out of Z and X, one must be double.

If Z is double then the contract can be split into 3 years and 8 years which is not possible as given contract can be 7 years contract, 4 years contract, 3 years contract or one year contract.

∴ From 2012 to 2015, x will have a four year contract with D, as D did not have any contract in 2010.

C did not have a contract in 2011

∴ A will have contract with C from 2010 to 2012 and C must from contract with Z from 2017 to 2019 and initial 7 years contract of B with Z.

Since B and D have only one contract in 2012, ∴ W will have contract with A and C in 2012.

A and C already made contract with 2 vendors, we are left with B & D for single year contract. D didn't have contract in 2010.

∴ D will have contract in 2019 with Y and B will have contract with Y in 2010.

Therefore the final table,

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
BZ	BZ	BZ	BZ	BZ	BZ	BZ	CZ	CZ	CZ
AX	AX	AX							
		DX	DX	DX	DX				
BY		CW							DY
		AW							

2015 (BZ and DX)

QNo:- 32 ,Correct Answer:- A

Explanation:- Given that each institute have contract with two vendors
From I, II, and III facts given, we have

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
X	X	X	X	X	X				
Y									Y
		W							
		W							

From the IV fact, we can say in 2012 there are five contracts. This means out of Z and X, one must be double.

If Z is double then the contract can be split into 3 years and 8 years which is not possible as given contract can be 7 years contract, 4 years contract, 3 years contract or one year contract.

∴ From 2012 to 2015, x will have a four year contract with D, as D did not have any contract in 2010.

C did not have a contract in 2011

∴ A will have contract with C from 2010 to 2012 and C must from contract with Z from 2017 to 2019 and initial 7 years contract of B with Z.

Since B and D have only one contract in 2012, ∴ W will have contract with A and C in 2012.

A and C already made contract with 2 vendors, we are left with B & D for single year contract. D didn't have contract in 2010.

∴ D will have contract in 2019 with Y and B will have contract with Y in 2010.

Therefore the final table,

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
BZ	BZ	BZ	BZ	BZ	BZ	BZ	CZ	CZ	CZ
AX	AX	AX							
		DX	DX	DX	DX				
BY		CW							DY
		AW							

D had a contract with Y in 2019

QNo:- 33 ,Correct Answer:- A

Explanation:- Given that each institute have contract with two vendors
From I, II, and III facts given, we have

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
X	X	X	X	X	X				
Y									Y
		W							
		W							

From the IV fact, we can say in 2012 there are five contracts. This means out of Z and X, one must be double.

If Z is double then the contract can be split into 3 years and 8 years which is not possible as given contract can be 7 years contract, 4 years contract, 3 years contract or one year contract.

∴ From 2012 to 2015, x will have a four year contract with D, as D did not have any contract in 2010.

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∴ A will have contract with C from 2010 to 2012 and C must from contract with Z from 2017 to 2019 and initial 7 years contract of B with Z.

Since B and D have only one contract in 2012, ∴ W will have contract with A and C in 2012.

A and C already made contract with 2 vendors, we are left with B & D for single year contract. D didn't have contract in 2010.

∴ D will have contract in 2019 with Y and B will have contract with Y in 2010.

Therefore the final table,

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
BZ	BZ	BZ	BZ	BZ	BZ	BZ	CZ	CZ	CZ
AX	AX	AX							
		DX	DX	DX	DX				
BY		CW							DY
		AW							

3 (2016, 2017, 2018)

QNo:- 34 ,Correct Answer:- C

Explanation:- Given that each institute have contract with two vendors
From I, II, and III facts given, we have

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
X	X	X	X	X	X				
Y									Y
		W							
		W							

From the IV fact, we can say in 2012 there are five contracts. This means out of Z and X, one must be double.

If Z is double then the contract can be split into 3 years and 8 years which is not possible as given contract can be 7 years contract, 4 years contract, 3 years contract or one year contract.

∴ From 2012 to 2015, x will have a four year contract with D, as D did not have any contract in 2010.

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Since B and D have only one contract in 2012, ∴ W will have contract with A and C in 2012.

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∴ D will have contract in 2019 with Y and B will have contract with Y in 2010.

Therefore the final table,

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
BZ	BZ	BZ	BZ	BZ	BZ	BZ	CZ	CZ	CZ
AX	AX	AX							
		DX	DX	DX	DX				
BY		CW							DY
		AW							

Exactly 3

QNo:- 35 ,Correct Answer:- B

Explanation:- Given that each institute have contract with two vendors
From I, II, and III facts given, we have

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
X	X	X	X	X	X				
Y									Y
		W							
		W							

From the IV fact, we can say in 2012 there are five contracts. This means out of Z and X, one must be double.

If Z is double then the contract can be split into 3 years and 8 years which is not possible as given contract can be 7 years contract, 4 years contract, 3 years contract or one year contract.

∴ From 2012 to 2015, x will have a four year contract with D, as D did not have any contract in 2010.

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∴ D will have contract in 2019 with Y and B will have contract with Y in 2010.

Therefore the final table,

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
BZ	BZ	BZ	BZ	BZ	BZ	BZ	CZ	CZ	CZ
AX	AX	AX							
		DX	DX	DX	DX				
BY		CW							DY
		AW							

A and B only (In 2010 ⇒ BZ and BY, In 2012 ⇒ AX and AW)

QNo:- 36 ,Correct Answer:- A

Explanation:- Given that each institute have contract with two vendors
From I, II, and III facts given, we have

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
X	X	X	X	X	X				
Y									Y
		W							
		W							

From the IV fact, we can say in 2012 there are five contracts. This means out of Z and X, one must be double.

If Z is double then the contract can be split into 3 years and 8 years which is not possible as given contract can be 7 years contract, 4 years contract, 3 years contract or one year contract.

∴ From 2012 to 2015, x will have a four year contract with D, as D did not have any contract in 2010.

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∴ A will have contract with C from 2010 to 2012 and C must from contract with Z from 2017 to 2019 and initial 7 years contract of B with Z.

Since B and D have only one contract in 2012, ∴ W will have contract with A and C in 2012.

A and C already made contract with 2 vendors, we are left with B & D for single year contract. D didn't have contract in 2010.

∴ D will have contract in 2019 with Y and B will have contract with Y in 2010.

Therefore the final table,

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
BZ	BZ	BZ	BZ	BZ	BZ	BZ	CZ	CZ	CZ
AX	AX	AX							
		DX	DX	DX	DX				
BY		CW							DY
		AW							

A, B, W and X

QNo:- 37 ,Correct Answer:- A

Explanation:- Average cannot be maximum or minimum.

Given that the student who missed mathematics exam didn't miss any other exam.

∴ If Alva miss mathematics then Alva's average = $\frac{80+75+75}{3}$ that's not equal to 70

∴ Alva eliminated, if Foni miss Mathematics, then Foni average (of best 3) = $\frac{88+83+83}{3}$

Which is not equal to 78. ∴ Foni is eliminated.

We can see that Esha got maximum marks in mathematics (which is not possible if she misses mathematics, as the missed exam is the average of remaining subjects).

∴ Carl will be the right answer as, Carl average = $\frac{100+90+80}{3} = 90$

Which is equal to mathematics score.

QNo:- 38 ,Correct Answer:- B

Explanation:-

As the marks in the missing exam in the average of the remaining marks (according to different condition) and we know average can neither be least nor maximum. \therefore Alva Bithi, Carl and Deep are eliminated. \therefore Answer will be Esha and Foni

QNo:- 39 ,Correct Answer:- B

Explanation:- Let's check for Esha only, by checking for Esha only we can eliminate all the wrong options.

There are two cases with the Hindi;

Case I \Rightarrow only miss Hindi exam \therefore score for Hindi for Esha = $\frac{95+80+60}{3} = 78.33$

\therefore Not equal to 85. Not satisfied

Case II \Rightarrow miss Hindi and Science both. Not possible as score is different for Hindi and Science. \therefore Alva and Deep will be the answer

QNo:- 40 ,Correct Answer:- D

Explanation:- From the table, we can see Bithi missed the Science paper definitely but we are not sure of Alva and Deep. One out of Alva and Deep will definitely miss the Science exam

QNo:- 41 ,Correct Answer:- 3,4

Explanation:- We can see that Esha, Carl and one out of Alva or Deep missed one examination.

QNo:- 42 ,Correct Answer:- 4

Explanation:- We are definite about Bithi, Carl, Esha and Foni

QNo:- 43 ,Correct Answer:- A

Explanation:- We have to maximize the rating of Damodaran, taking care that he did not get the bonus.

\therefore Damodaran = $5 + 5 + 3 + 4 + 1 = 18 \therefore$ Rating = $18/5 = 3.6$

QNo:- 44 ,Correct Answer:- C

Explanation:- We have to minimize the rating of Eman, taking care that Eman will get bonus.

\therefore Eman = $5 + 3 + 3 + 2 + 2 = 15 \therefore$ Rating = $15/5 = 3.0$

QNo:- 45 ,Correct Answer:- A

Explanation:- As, we have to find the minimum possible value of monthly payment is mean we need to find the payment of ill the drivers, keeping their rating minimum and all drivers will get the bonus.

$$\text{Arun} = 5 + 2 + 2 + 4 + 3 = 16$$

$$\text{Arun Rating} = 16/5 = 3.2$$

$$\therefore \text{Arun payment} = 1000 + 3.2 \times 250 = 1800$$

$$\text{Barun} = 3 + 5 + 2 + 2 + 3 = 15$$

$$\text{Barun Rating} = 15/5 = 3.0$$

$$\therefore \text{Barun payment} = 1200 + 200 \times 3 = 1800$$

$$\text{Chandan} = 5 + 5 + 2 + 2 + 3 = 17$$

$$\text{Chandan Rating} = 17/5 = 3.4$$

$$\text{Chandan Payment} = 1400 + 3.4 \times 100 = 1740$$

$$\text{Damodaran} = 5 + 3 + 3 + 2 + 2$$

$$\text{Damodaran Rating} = 15/5 = 3.0$$

$$\therefore \text{Damodaran payment} = 1300 + 150 \times 3 = 1750$$

$$\text{Eman} = 5 + 3 + 3 + 2 + 2 = 15$$

$$\text{Eman Rating} = 15/5 = 3.0$$

$$\therefore \text{Eman Payment} = 1100 + 200 \times 3 = 1700$$

$$\therefore \text{Eman payment will be minimum i.e. 1700}$$

QNo:- 46 ,Correct Answer:- A

Explanation:- Now we have to maximize the rating of all five drivers

$$\text{Arun} = 5 + 4 + 3 + 4 + 3 = 19. \text{Rating} = 19/5 = 3.80$$

$$\therefore \text{Arun Payment} = 1000 + 3.8 \times 250 = 1950$$

$$\text{Barun} = 3 + 5 + 4 + 4 + 3. \text{Rating} = 19/5 = 3.80$$

$$\therefore \text{Barun Payment} = 1200 + 200 \times 3.80 = 1960$$

$$\text{Chandan} = 5 + 5 + 2 + 4 + 4 = 20. \text{Rating} = 20/5 = 4.0$$

$$\therefore \text{Chandan Payment} = 1400 + 100 \times 4 = 1800$$

$$\text{Damodaran} = 5 + 3 + 5 + 4 + 4 = 21$$

$$\text{Rating} = 21/5 = 4.2$$

$$\therefore \text{Damodaran Payment} = 1300 + 150 \times 4.2 = 1930$$

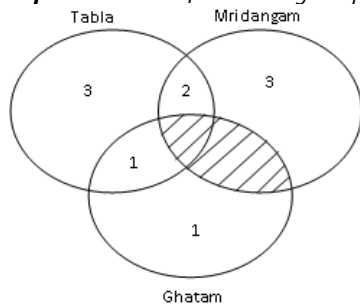
$$\text{Eman} = 5 + 5 + 4 + 4 + 2 = 20. \text{Rating} = 20/5 = 4.0$$

$$\therefore \text{Eman payment} = 100 + 200 \times 4 = 1900$$

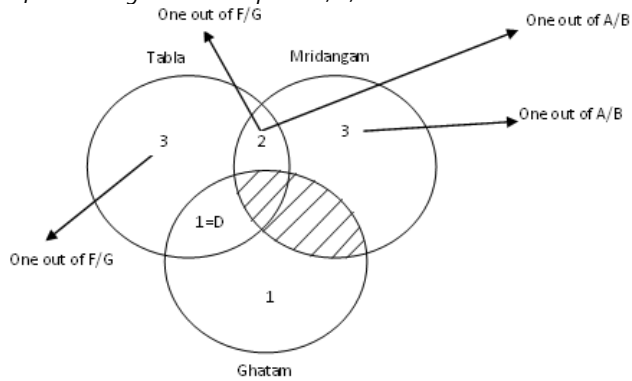
$$\therefore \text{Barun's payment is maximum i.e. 1960}$$

QNo:- 47 ,Correct Answer:- C

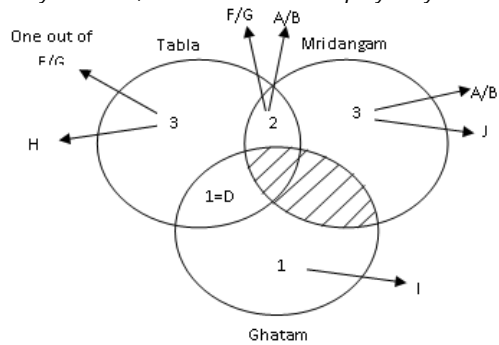
Explanation:- After Reading the passage



After reading instruction point 1, 2, 3



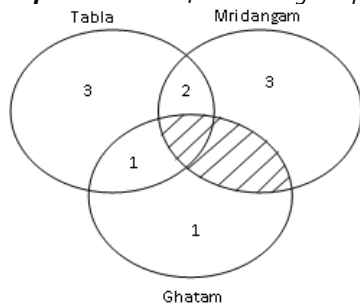
4th point says that neither I nor J is an expert in Tabla. After combing 4th and 5th point. We can definitely say that, I must play only Ghatam, This means H must play only Tabla



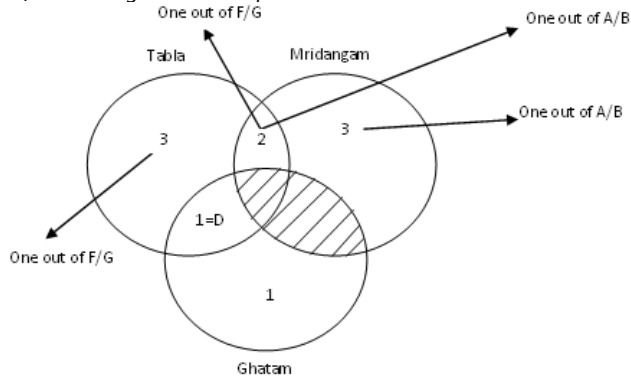
H

QNo:- 48 ,Correct Answer:- C

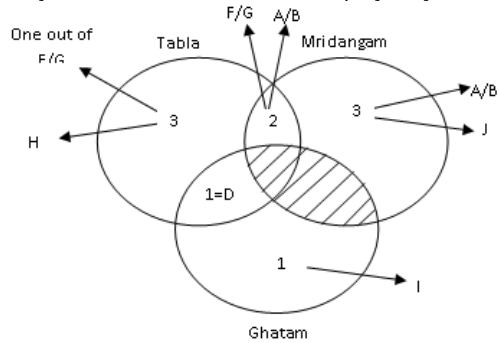
Explanation:- After Reading the passage



After reading instruction point 1, 2, 3



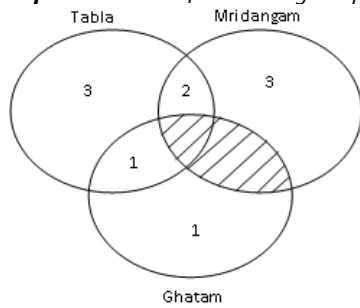
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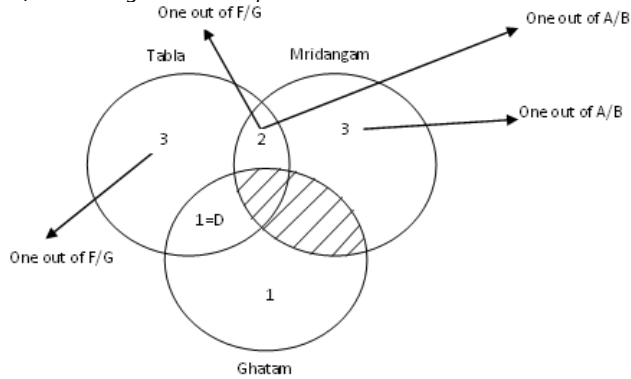
J

QNo:- 49 ,Correct Answer:- C

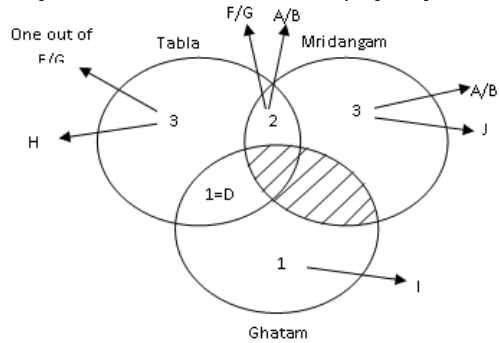
Explanation:- After Reading the passage



After reading instruction point 1, 2, 3



4th point says that neither I nor J is an expert in Tabla. After combing 4th and 5th point. We can definitely say that, I must play only Ghatam, This means H must play only Tabla

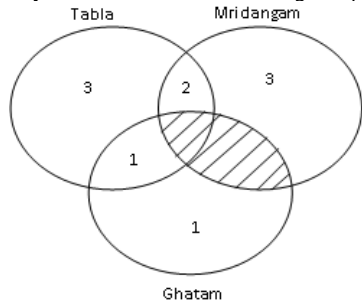


It can only be from A/B, F/G

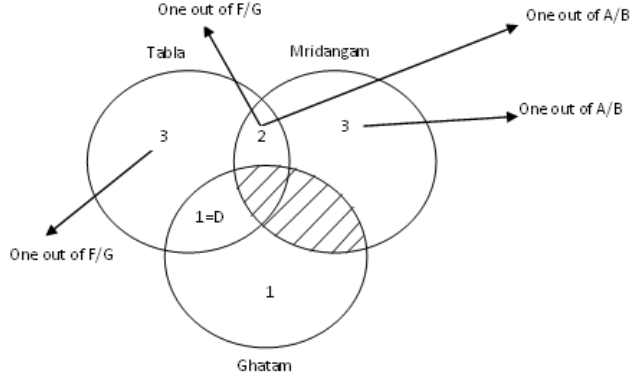
∴ C and F is the correct options

QNo:- 50 ,Correct Answer:- A

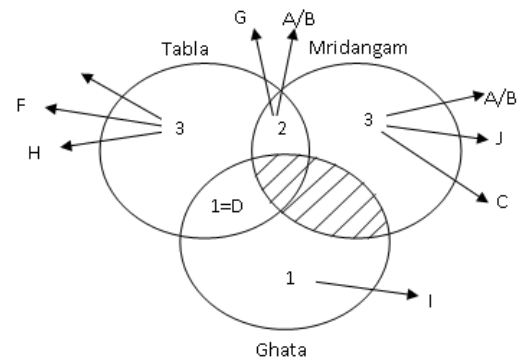
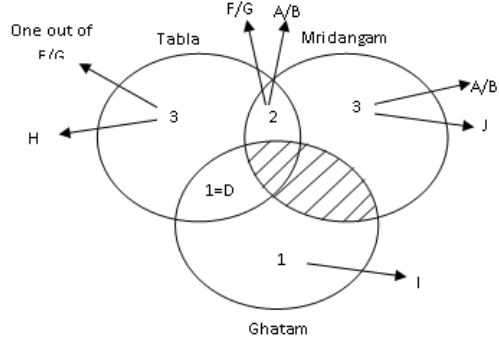
Explanation:- After Reading the passage



After reading instruction point 1, 2, 3



4th point says that neither I nor J is an expert in Tabla. After combing 4th and 5th point. We can definitely say that, I must play only Ghatam, This means H must play only Tabla



∴ E, F & H are expert in Tabla only

QNo:- 51 ,Correct Answer:- B

Explanation:- We want the least value of the maximum function, which is possible when the values inside the brackets are as close as possible. As number of students must be integer, therefore values of x_1, x_2, \dots, x_{12} can be 8 or 9 (i.e 8,8,8,8,8,8,8,8,9,9,9,9).

Therefore max value of x_0 is 9.

QNo:- 52 ,Correct Answer:- 62

Explanation:- Let the number of toffees be x .

Toffees Given to first child = $(x/2)+1$

Toffees given to second child = $(1/2)(x - (x/2) - 1) + 1 = (x/4) + (1/2)$

We find the symmetry in the pattern of toffees distribution,

Therefore toffees distribution done $[(x/2)+1], [(x/4)+(1/2)], [(x/8)+(1/4)], [(x/16)+(1/8)], [(x/32)+(1/16)]$

$\Rightarrow [(x/2)+1] + [(x/4)+(1/2)] + [(x/8)+(1/4)] + [(x/16)+(1/8)] + [(x/32)+(1/16)] = x$

$\Rightarrow (62/32) = x - (31/32)x$

$\Rightarrow x=62$

QNo:- 53 ,Correct Answer:- 12

Explanation:- Let x be the number of year after which veeru amount will be equal to Joy amount.

So, (principle + Interest) for Veeru after x year = $10,000 + 10,000\left(\frac{5x}{100}\right)$ and (principle + Interest) for Joy after $(x - 2)$ years =

$8000 + 8000\left(\frac{10(x-2)}{100}\right)$

According to given condition,

$\Rightarrow 10000 + 10000\left(\frac{5x}{100}\right) = 8000 + 8000\left(\frac{10(x-2)}{100}\right)$

$\Rightarrow 10000 + 500x = 800 + 800x - 1600 \Rightarrow x = 12$

QNo:- 54 ,Correct Answer:- D

Explanation:- $2^{y^2 \log_3 5} = 5^{\log_2 y^2}$

$\Rightarrow \log(2^{y^2 \log_3 5}) = \log(5^{\log_2 y^2})$

$\Rightarrow y^2 \frac{\log 5}{\log 3} \times \log 2 = \frac{\log 3}{\log 2} \times \log 5$

$\Rightarrow y^2 = \left(\frac{\log 3}{\log 2}\right)^2 \Rightarrow y = -\left(\frac{\log 3}{\log 2}\right)$ [$\because y$ is negative]

$y = -\log_2 3 = \log_2 \frac{1}{3}$

QNo:- 55 ,Correct Answer:- 12

Explanation:- As, distance covered is same with both the speed,

$\therefore D = S \times T \Rightarrow \frac{8}{60} \times t = \frac{15}{60} \times (t - 35)$

(where, t is the time taken in minutes by Amal when his speed is 8km/hr)

$\Rightarrow t = 75$ minutes $\therefore D = \frac{8}{60} \times 75$

This means, Amal started from his house at 9:00 AM and taken 75 minutes to reach office with the speed of 8 km/hr.

Now, Amal starts at 9:10 AM and wanted to reach office at 10:00 AM, i.e. is 50 minutes.

We know, $S = \frac{\text{Distance}}{\text{Time}} = \frac{8 \times 60 \times 75}{50 \times 60} = 12$ km/hr

QNo:- 56 ,Correct Answer:- D

Explanation:- Let usual speed is x and time is t
If speed becomes $1/3$ time will become 3 times so, time taken is $3t$
Given that $3t - t = 30$. So t is 15 min.

On return journey, in 5 minutes, it will cover $1/3^{\text{rd}}$ distance, To cover the remaining distance, it has 10 minutes at usual speed but as it stopped for 4 minutes, remaining time is 6 minutes.

Ratio of normal time to new time is 5:3.

Ratio of normal speed to new speed is 3:5.

So speed increased by $2/3$ or 66.77%

QNo:- 57 ,Correct Answer:- B

Explanation:-

$$2^x + 2^{-x} = 2 - (x-2)^2$$

LHS equation will always be greater than or equal to 2, whereas RHS equation will always be less than or equal to 2.

This means this can only be equal when LHS and RHS both are 2, which is not possible as they will be equal to 2 at two different values of x .

QNo:- 58 ,Correct Answer:- 8

Explanation:-

Dye	Water
40L \Rightarrow 2	: 3
\Rightarrow 16	24

Now, water is added and ratio becomes 2:5 but dye volume in the solution is same

Let, x L \Rightarrow 2	: 5
\Rightarrow 16	?

$$\therefore \frac{2}{7} \times x = 16 \Rightarrow x = 56$$

\Rightarrow 16	40
------------------	----

Now, one fourth of solution taken out

\Rightarrow 12	30
------------------	----

Now, dye is added but water volume remain same and ratio become 2:3

Let $y^2 \Rightarrow$ 2	: 3
?	30

$$\Rightarrow \frac{3}{5} \times y = 30 \Rightarrow y = 50$$

\therefore 50L \Rightarrow 2	: 3
\Rightarrow 20	30

This means 8L dye is added.

QNo:- 59 ,Correct Answer:- D

Explanation:- $A + \frac{B+C}{2} = 5 \Rightarrow 2A + B+C = 10 \dots\dots\dots(1)$

$B + \frac{A+C}{2} = 7 \Rightarrow 2B + A+C = 14 \dots\dots\dots(2)$

$(2) - (1) \Rightarrow B - A = 4$

This means sum of A and B must be greater than 4 and it should also be even because if the sum of A and B will be odd then value of A and B will not be integer.

Therefore, only one option $\Rightarrow A + B = 6$

QNo:- 60 ,Correct Answer:- 21

Explanation:- 113, 114, 115, 116, 122

$\frac{3!}{2!} = 3$ cases for each number. $123 \Rightarrow 3! = 6$ cases for 123. \therefore Total = 15 + 6 = 21

QNo:- 61 ,Correct Answer:- C

Explanation:- Time taken to meet together will be the square root of the product of time taken to reach their destination after the meeting point.

i.e., $t = \sqrt{45 \times 20} = 30$ minutes

Distance = Speed \times time

$$\Rightarrow \frac{60}{60} \times (30 + 45) = \frac{S_2}{60} \times (30 + 20) \Rightarrow S_2 = \frac{60}{50} \times 75 \Rightarrow S_2 = 90 \text{ km/hr}$$

QNo:- 62 ,Correct Answer:- 36

Explanation:- $\text{Log}_4 5 = (\log_4 y) (\log_6 \sqrt{5})$

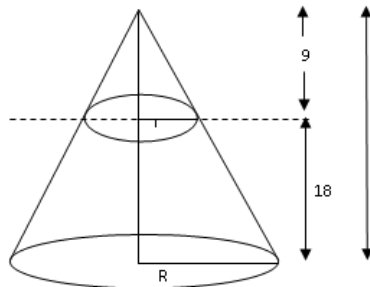
$$\Rightarrow \frac{\log 5}{\log y} = \log_6 \sqrt{5}$$

$$\Rightarrow \log_y 5 = \log_6 \sqrt{5} \Rightarrow \log_y 5 = 2 \log_6 \sqrt{5}$$

$$\Rightarrow \log_y 5 = \log_{36} 5$$

$$\Rightarrow y = 36$$

QNo:- 63 ,Correct Answer:- A



Explanation:-

We know, $\frac{27}{R} = \frac{9}{r}$

$$\Rightarrow r = \frac{R}{3} \text{ Given,}$$

$$\frac{1}{3} \pi [R^2 \times 27 - r^2 \times 9] - \frac{1}{3} \pi [r^2 \times 9] = 225$$

$$\Rightarrow \frac{1}{3} \pi R^2 [25] = 225$$

$$\Rightarrow \frac{1}{3} \pi R^2 \times 27 = \frac{225}{25} \times 27$$

$$\Rightarrow \text{Volume of cone} = 243$$

QNo:- 64 ,Correct Answer:- D

Explanation:- Time taken Relative speed

Length of train $\rightarrow 90$ $\rightarrow S - 2$

Length of train $\rightarrow 100$ $\rightarrow S - 4$

Length of train $\rightarrow ?$ $\rightarrow S$

$$\therefore \frac{S-2}{S-4} = \frac{100}{90}$$

$$\Rightarrow 9S - 18 = 10S - 40$$

$$\Rightarrow S = 22$$

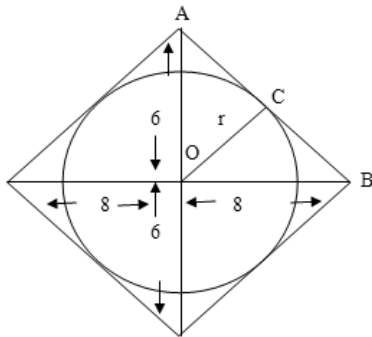
$$\therefore \text{time taken} = \frac{\text{Distance}}{\text{Speed}}$$

$$= \frac{90 \times 20}{22}$$

$$= 81.81$$

$$\approx 82$$

QNo:- 65 ,Correct Answer:- C



Explanation:-

By Pythagoras, AB will be = 10 cm

Now, area of $\Delta AOB = \frac{1}{2} \times 6 / 8$

Also $\Delta AOB = \frac{1}{2} \times 10 \times OC$

$$\Rightarrow \frac{1}{2} \times 6 \times 8 = \frac{1}{2} \times 10 \times OC$$

$$\Rightarrow 4.8 \text{ cm} = r.$$

$$\frac{\text{Area of circle}}{\text{Area of R hombus}} = \frac{\pi(4.8)^2}{\frac{1}{2} \times 12 \times 16} = \frac{6}{25} \pi$$

QNo:- 66 ,Correct Answer:- D

Explanation:- $f(5+x) = f(5-x)$
 $x \rightarrow x-5$

$$\Rightarrow f(5+x-5) = f(5-x+5)$$

$$\Rightarrow f(x) = f(10-x)$$

Given, $f(x) = 0$

$$\therefore \text{Also, } f(10-x) = 0$$

Given that these are four distinct solutions

$$\Rightarrow f(\alpha) = 0, f(\beta) = 0$$

$$\Rightarrow f(10-\alpha) = 0, f(10-\beta) = 0$$

$$\text{Sum of these roots} = \alpha + \beta + 10 - \alpha + 10 - \beta = 20$$

QNo:- 67 ,Correct Answer:- C

Explanation:- $x = (4096)^{7+4\sqrt{2}}$

$$\Rightarrow x = (2^6)^{2(7+4\sqrt{2})}$$

$$\Rightarrow x = (64)^{14+8\sqrt{2}}$$

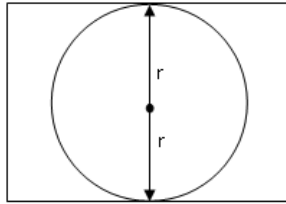
$$\Rightarrow (x)^{\frac{1}{14+8\sqrt{2}}} = 64$$

$$\Rightarrow (x)^{\frac{14-8\sqrt{2}}{4}} = 64$$

$$\Rightarrow x^{\left(\frac{7-2\sqrt{2}}{2}\right)} = 64$$

$$\Rightarrow \frac{x^7}{x^{2\sqrt{2}}} = 64$$

QNo:- 68 ,Correct Answer:- A



Explanation:-

Let the area of circle be x

$$\Rightarrow x + \frac{2}{3}x = 135$$

$$\Rightarrow x = \frac{135 \times 3}{5} \Rightarrow x = 81 \Rightarrow \pi r^2 = 81 \text{ (where, } r \text{ is radius of circle)}$$

$$\Rightarrow r = \frac{9}{\sqrt{\pi}}$$

$$\Rightarrow 2r = \frac{18}{\sqrt{\pi}} \Rightarrow (2r) \text{ (other side of rectangle) } = 135$$

(let, ℓ be the other side of rectangle)

$$\ell = \frac{135}{18} \sqrt{\pi}$$

$$\ell = \frac{15\sqrt{\pi}}{2}$$

$$\text{Perimeter} = 2(\ell + b)$$

$$= 2\left(\frac{15}{2}\sqrt{\pi} + \frac{18}{\sqrt{\pi}}\right)$$

$$= 3\pi\left(5 + \frac{12}{\pi}\right)$$

QNo:- 69 ,Correct Answer:- 1

Explanation:- Let, $x + \frac{1}{x} = y$

$$\Rightarrow y^2 - 3y + 2 = 0$$

$$\Rightarrow y = \frac{3 \pm \sqrt{9 - 4 \cdot 1 \cdot 2}}{2}$$

$$= 2, 1$$

$$\therefore x + \frac{1}{x} = 2$$

$$x + \frac{1}{x} = 1$$

$$\Rightarrow x^2 + 1 - 2x = 0$$

$$\Rightarrow x^2 + 1 - x = 0$$

$$\Rightarrow x = \frac{2 \pm \sqrt{4 - 4 \cdot 1 \cdot 1}}{2}$$

$$\Rightarrow x = \frac{1 \pm \sqrt{1 - 4 \cdot 1 \cdot 1}}{2}$$

$$= 1$$

Imaginary root

$\therefore x = 1$. Only one real root

QNo:- 70 ,Correct Answer:- D

Explanation:- Case I \Rightarrow when $C = 8$

$$\Rightarrow bc = 96 \Rightarrow b = 12$$

$$\therefore ab = 432$$

$$\Rightarrow a = 36$$

$$\Rightarrow a + b + c = 8 + 12 + 36 = 56$$

Case II \Rightarrow when $C = 7$

$$\Rightarrow bc = 96 \Rightarrow b \text{ will not be integer}$$

$\therefore c = 7$ not possible

Case III \Rightarrow when $C = 6$

$$\Rightarrow bc = 96 \Rightarrow b = 16$$

$$\therefore ab = 432$$

$$\Rightarrow a = 432/16 = 27$$

$$\Rightarrow a + b + c = 49$$

Case IV $\Rightarrow C = 5$ (not possible) because b will not be integer

Case V $\Rightarrow C = 4$

$$\therefore bc = 96 \Rightarrow b = 24$$

$$\therefore ab = 432 \Rightarrow a = 432/24 = 18$$

$$\therefore a + b + c = 46$$

No, need to check further, of 46 is the least option given

QNo:- 71 ,Correct Answer:- 3

Explanation:- $|x - y| \leq 1, y \geq 0, y \leq 1$

If $x > 0 \Rightarrow x - y = 1$ (1)

And $x < 0 \Rightarrow x - y = 1$

Or $x + y = -1$ (2)

Put $x = 0$ in (1), $y = -1$

Put $y = 0$ in (1) $x = 1$

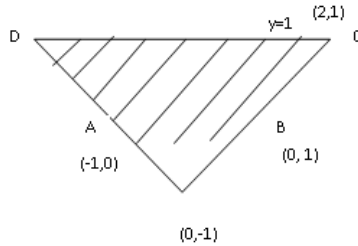
Put $y = 1$ in (1), $x = 2$

Put $x = 0$ in (2), $y = -1$

$y = 0$ in (2), $x = -1$

$y = 1$ in (2), $x = -2$

Shaded area is trapezium = $\frac{1}{2} [2 + 4] \times 1 = 35q.units$



QNo:- 72 ,Correct Answer:- C

Explanation:- 65% lit. 35% Illiterates

↓

25%

16.25% young

Given, 28% are young in which 16.25% are literates (from above) and 11.75% are illiterates. \therefore out of 35% illiterates 23.25% are old, that means

$$\left(\frac{23.25}{35} \times 100 \right) \%$$

\Rightarrow 66.428% old illiterates

QNo:- 73 ,Correct Answer:- C

Explanation:- aa bb a > 0

So, numbers are

1100 2200

1122 2222

1144 2244

1166 2266

1188 2288

↓ ↓

Mean Mean and so on

1144 2244

Average of 1144, 2244, 3344, 4444, 5544, 6644, 7744, 8844, 9944 is 5544

QNo:- 74 ,Correct Answer:- C

Explanation:-

	A	B	C
Volume	3	4	7
Weight of volume	5	2	6
Weight	15	8	42

$$\therefore \text{C's weight} = \frac{42}{(15+8+42)} \times 130 = 84 \text{ kg}$$

QNo:- 75 ,Correct Answer:- 20000

Explanation:- Let the purchase price of develop be $x \therefore 1.2x + 0.9(50000-x) = 1.02 \times 50000$
 $\Rightarrow 0.3x + 45000 = 51000 \Rightarrow x = \frac{6000}{3} \times 10 \Rightarrow x = 20,000$

QNo:- 76 ,Correct Answer:- B

Explanation:- $(x^2 - 7x + 11)^{x^2 + 3x + 42} = 1$

As $a^0 = 1$

$$\Rightarrow x^2 - 13x + 42 = 0$$

$$\Rightarrow x = 6, 7$$

$$\text{Also, } x^2 - 7x + 11 = 1, x^2 - 7x + 10 = 0$$

$$\Rightarrow x = 2, 5$$

$$\text{Also, } x^2 - 7x + 11 = -1, x^2 - 7x + 12 = 0$$

$$\Rightarrow x = 3, 4$$