

SNAP 2015

Quantitative Aptitude

111. A batsman was having 32 runs per innings as his average after 15th innings. His average increased by 2 runs after 16th inning. Then what was his score in the 16th inning?

A 64

B 60

C 46

D 62

Answer: A

Explanation:

This can be answered either by using averages concept or alligations concept.

Alligations : $p = \frac{(p_1q_1 + p_2q_2)}{q_1 + q_2}$ where q_1 and q_2 are the number of innings in two group's , p_1 and p_2 are there respective averages(average runs) , p is the overall average.

Here $q_1=15$, $q_2=1$, $p_1=32$, $p=34$ (since increased by 2 runs)

On solving the equation you get $p_2=64$

112. The least number which is a perfect square and is divisible by each of the numbers 14, 16, 18 is

A 6048

B 7056

C 1008

D 2046

Answer: B

Explanation:

The least number that is divisible by 14,16,18 will be the LCM of three which is 1008 but it is not a perfect square .

$1008 = 2^4 \cdot 3^2 \cdot 7$ To make it a perfect square you need to multiply it by 7.

$1008 \cdot 7 = 7056$

113. Four people clap after every 20 minutes, 30 minutes, 40 minutes and 50 minutes respectively. All of them clapped together at 10.00 am. Then they will again clap together at _____

A 3 pm

B 5 pm

C 6 pm

D 8 pm

Answer: D

Explanation:

All of them will clap together after $\text{LCM}(20,30,40,50)$ minutes = 600 minutes = 10hrs

Therefore they will clap together again at 8pm.

114. Three candidates "A", "B", "C" participated in an election. "A" gets 40% of the votes more than "B". "C" gets 20% votes more than "B". "A" also overtakes "C" by 4000 votes. If 90% voters voted and no invalid or illegal votes were cast, then what will be the number of voters in the voting list?

A 72000

B 80000

C 70000

D 78500

Answer: B

Explanation:

Let $100x$ be the total numbers of voters in the voters list. $\Rightarrow 90x$ voters voted

$A = 1.4B$ (since A received 40% more votes than B)

$C = 1.2B$

Given $A - C = 4000$

$1.4B - 1.2B = 4000 \Rightarrow B = 20000 \Rightarrow A = 24000$ and $C = 28000$

So total voter who voted $= A + B + C = 72000$ which is 90% of the total list.

So when 90% = 72000, 100% = 80000.

115. In a competitive exam there were 5 sections. 10% of the total number of students cleared the cut off in all the sections and 5% cleared none of the sections. From the remaining candidates 30% cleared only section 1, 20% cleared only section 2, 10% cleared only section 3 and remaining 1020 candidates cleared only section 4. How many students appeared in the competitive exam ?

A 2550

B 2800

C 3000

D 3200

Answer: C

Explanation:

Let total number of students = $100x$

$10x$ = students who cleared the cut off in all the sections

$5x$ = students who cleared none of the sections.

Remaining = $85x$

Out of these $85x$, 30% cleared only 1st section, 20% cleared only 2nd section, 30% cleared only section 3

Together they constitute 60% of $85x$

Remaining = 40% of $85x = 1020$

On solving $x = 30$

Total students = $100x = 100 \times 30 = 3000$

116. A man sold $\frac{3}{5}$ th of his articles at a gain of 20% and the remaining at cost price. Find the percentage gain earned in the transaction.

A 8

B 10

C 12

D 14

Answer: C

Explanation:

This can be solved in an easier manner by using allegations concept.

$p = \frac{(p_1q_1 + p_2q_2)}{q_1 + q_2}$ where p_1, p_2 are profit percentages, q_1, q_2 are the number of articles, p is the overall profit percentage.

Here $q_1 = 3/5$, $q_2 = 2/5$, $p_1 = 20$, $p_2 = 0$

On solving you get p as 12

117. **A trader sells 20 articles at Rs. 54 per article after giving 10% discount and gains 50% profit. If the discount is not given, the profit gained is _____**

A 56.76%

B 66.66%

C 62.66%

D 63.66%

Answer: B

Explanation:

$P = 50\%$ and $D = 10\%$

The trader earns a revenue of Rs 54×20 after selling the items. = Rs 1080.

This is equivalent to a 50 percent profit.

Hence the cost price of all the items is $\text{Rs } 1080 \times \frac{2}{3} = \text{Rs } 720$.

The revenue of Rs 1080 was earned after a discount of 10 percent.

If K is the marked price: $K \times (9/10) = \text{Rs } 1080$.

Hence the profit percentage if no discount is provided :

$$\frac{(1200 - 720)}{720} \cdot 100 = 66.66\%$$

118. **A bottle contains 50 liters of milk. From this bottle 5 liters of milk was taken out and replaced the water. This process was repeated further for three times. How much milk is now contained in the bottle ?**

A 32.8 litres

B 34.4 litres

C 36.8 litres

D 46.5 litres

Answer: A

Explanation:

Final volume of Milk = Initial volume of milk $\left(1 - \frac{y}{x}\right)^n$

where y=quantity of milk removed in each iteration , x= total quantity of the mixture and n=number of times the process being repeated

$$\text{Final volume of milk} = 50 \cdot \left(1 - \frac{5}{50}\right)^4$$

$$= 32.805$$

119. **A ball is dropped from a height of 200 meters. After striking the floor it re-bounces to $\frac{4}{5}th$ of the height from where it fell. The total distance it travels before coming to rest is ____**

A 1200 meters

B 1600 meters

C 1800 meters

D 1820 meters

Answer: C

Explanation:

For the 1st drop the distance travelled by the ball = 200m

After 1st drop it rebounds to a height of $\frac{4}{5} \cdot 200$ and then falls from that height . The total distance travelled in this case would be $2 \cdot \frac{4}{5} \cdot 200$

Similarly the total distance travelled in next case would be $2 \cdot \frac{4}{5} \cdot \frac{4}{5} \cdot 200$

So total distance =

$$200 + 2 \cdot 200 \cdot \left(\frac{4}{5} + \left(\frac{4}{5}\right)^2 + \left(\frac{4}{5}\right)^3 + \dots\right)$$

$$200 + 400 \left(\frac{\frac{4}{5}}{1 - \frac{4}{5}}\right) = 1800\text{m}$$

120. The sum of all two digit numbers that give a remainder 2 when they are divided by 7 is _____

- A 552
- B 654
- C 658
- D 684

Answer: B

Explanation:

$\frac{12}{2} (16 + 93)$ The numbers will be of the form $7k+2$ where k is an whole number.

The smallest two digit number is when $k=2$ which is 16 and the largest 2 digit number is 93 $k= 13$

So sum = $16+23+.... +93$ which are in AP.

Sum to n terms of an AP= $\frac{n}{2}(a+l)$, where n =number of terms , a =1st term , l =last term

Here $n=12$, $a=16$, $l=93$

Hence sum = 654

121. A man covers half of his journey by train at 90 km/hr, one-third of the remainder by bus at 30 km/hr and the rest by cycle at 10 km/hr. The average speed during the entire journey is _____

- A 22.5 km/hr
- B 28.5 km/hr
- C 30.0 km/hr
- D 32.5 km/hr

Answer: A

Explanation:

Average speed = Total distance/total time

Let us consider total distance =180km

Case 1 : man covers half of his journey by train at 90 km/hr

Distance= 90km $\Rightarrow$ time $t_1 = \frac{90}{90} = 1$ hr

Remaining distance = 90km

Case 2 : man covers one-third of the remainder by bus at 30 km/hr

$$\text{Distance} = 30\text{km} \Rightarrow \text{time } t_2 = \frac{30}{30} = 1\text{hr}$$

Case 3 : man covers rest by cycle at 10 km/hr

$$\text{Distance} = 60\text{km} \Rightarrow \text{time } t_3 = \frac{60}{10} = 6\text{hr}$$

$$\text{Therefore Average speed} = \frac{180}{1+1+6} = 22.5\text{km/hr}$$

122. John's grandfather was five times older to him 5 years ago. He would be two times of his age after 25 years from now. What is the ratio of John's age to that of his grandfather ?

A 7 : 11

B 5 : 11

C 3 : 11

D 4 : 11

Answer: C

Explanation:

Let age of john 5 years ago be x years

age of his grandfather 5 years ago will be 5x

25 years from now there ages will be x+30 and 5x+30 respectively

$$\text{Given } 5x+30 = 2(x+30) \Rightarrow x=10$$

So there present ages would be x+5=15 and 5x+5=55

Ratio = 3:11

123. A number when successively divided by 5 and 6 gives remainders 3 and 2 respectively. What will be the remainders if the number is successively divided by 3 and 4 ?

A 2, 3

B 2, 1

C 1, 2

D 3, 4

Answer: C

Explanation:

Going in the reverse order

When a number is divided by 6, the remainder is 2 $\Rightarrow$ the number is of the form $6k+2$

When $6k+2$ is divided by 5, the remainder is 3 $\Rightarrow$ the number is of the form $5(6k+2)+3 = 30k+13$

When $30k+13$ is divided by 3, the remainder is 1.

The remaining is $30k + 12$, so when $30k+12$ is divided by 4, the remainder is 2

This can also have another possibility of 1, 0 to be the remainders when successively divided by 3 and 4. Among the given options 1, 2 satisfies this condition.

124. How many zeros would be there in $1024!$

- A 240
- B 248
- C 256
- D 253

Answer: D

Explanation:

The number of zeros in $n!$ = highest power of 5 in $n!$

Highest power of 5 in $1024!$ = $\left[\frac{1024}{5} \right] + \left[\frac{1024}{25} \right] + \left[\frac{1024}{125} \right] + \left[\frac{1024}{625} \right]$ where $[]$ is the greatest integer function.

Highest power of 5 in $1024!$ = $204 + 40 + 8 + 1 = 253$

125. If $x = 3 + 2\sqrt{2}$ what will be the value of $x^2 + \left(\frac{1}{x^2}\right)$?

- A 35
- B 32
- C 36
- D 34

Answer: D

Explanation:

$$x = 3 + 2\sqrt{2}$$

$$\frac{1}{x} = 3 - 2\sqrt{2}$$

$$x^2 + \frac{1}{x^2} = \left(x + \frac{1}{x}\right)^2 - 2 = 6^2 - 2 = 34$$

126. The unit digit in the final solution when, $13 \times 27 \times 63 \times 51 \times 98 \times 46$ is

- A 4
- B 8
- C 2
- D none of the above

Answer: A

Explanation:

For calculating the units digit ,you only take last digit in each number and start multiplying them and when ever a 2 digit number is generated,you take only the units digit of that as well and go on.

Therefore $13*27*63*51*98*46 = 3*7*3*1*8*6 = 21*3*1*8*6 = 1*3*1*8*6 = 24*6 = 4*6 = 24 = 4$

127. **A dishonest seller sells his grocery items using a false weight and thus gains 5% for a kilogram, he uses the weight of approximately _____**

- A** 940.251
- B** 943.123
- C** 948.238
- D** 952.381

Answer: D

Explanation:

Let us assume that he uses x grams of weight instead of 1000gm.

Now, $SP = CP * \frac{1000}{x}$

$$\frac{SP}{CP} = \frac{1000}{X}$$

$$\frac{SP}{CP} - 1 = \frac{1000}{X} - 1$$

$$\frac{5}{100} = \frac{1000}{X} - 1$$

$$\frac{5}{100} + 1 = \frac{1000}{X}$$

$$\frac{105}{100} = \frac{1000}{X}$$

$$X = 952.381$$

128. **A, B and C can do a work in 6, 8 and 12 days respectively. If they do the work together and earn Rs. 2700, what is the share of C in that amount ?**

- A** 600
- B** 900
- C** 1000
- D** 700

Answer: A

Explanation:

shares are divided in the ratio of their efficiency.

Let us assume that a work of 24units is to be done

A does 4 units of work every day

B does 3 units of work everyday

C does 2 units of work everyday.

So shares will be divided in the ratio 4:3:2

So C's share will be $\frac{2}{9} \cdot 2700 = 600$ Rs

129. How many words each of two vowels and three consonants can be formed from the letters of the word "UNIVERSAL" ?

A 7000

B 7200

C 7400

D 7800

Answer: B

Explanation:

The number of ways of selecting 2 vowels from U,I,A,E = ${}^4C_2 = 6$

The number of ways of selecting 3 consonants from N,V,R,S,L = ${}^5C_3 = 10$

After selecting you can arrange them in 5! ways.

Total number of words = $6 \cdot 10 \cdot 120 = 7200$

130. Three pipes A, B and C can fill a tank in 12 hours. All the pipes started working together and after 3 hours, C is closed. If A and B can fill the remaining part in 10 hours, then the number of hours taken by C alone to fill the tank is .

A 100 hours

B 110 hours

C 120 hours

D 130 hours

Answer: C

Explanation:

Let efficiencies of A,B,C be a,b,c respectively.

Given $a+b+c = \frac{W}{12} \Rightarrow$ Total work = $12(a+b+c)$

They worked together for 3 hours. So work done in 3 hours = $3(a+b+c)$

Remaining = $9(a+b+c)$ which is filled by a and b only in 10 hours

$$(9(a+b+c))$$

$$\text{So } a + b = \frac{(9(a+b+c))}{10}$$

On solving $a+b=9c$

$$\text{So } W = 12(9c+c) = 120c$$

$$\text{Time taken by C alone} = \frac{120c}{c} = 120 \text{ hours}$$

131. If the numbers between 1 to 65 which will be divisible by 4 are taken and then if the number present in the units places and tens places is swapped, post which they are written in ascending order, then which of the following number will be at 10th place from the last ?

A 40

B 24

C 44

D 25

Answer: A

Explanation:

Multiples of 4 start from 04 to 64 in the given range.

Units digit of multiples of 4 end with 0, 2, 4, 6, 8.

On swapping, they come at ten's place.

So, swapped nos. when arranged in ascending order start with 0 in ten's place and then 2 in ten's place and so on...

40 comes 7th in the swapped series which is also 10th from last.

132. Ajit, Ravi and Hari were trying to hit a target. If Ajit hits the target 5 times in 8 attempts, Ravi hits it 3 times in 5 attempts and Hari hits it 2 times in 4 attempts. What is the probability that the target is hit by at least 2 persons ?

A $\frac{49}{80}$

B $\frac{24}{80}$

C $\frac{45}{80}$

D $\frac{25}{80}$

Answer: A

Explanation:

Probability of Ajit = $\frac{5}{8}$

Probability of Ravi = $\frac{3}{5}$

Probability of Hari = $\frac{1}{2}$

Probability that the target is hit by at least 2 persons = $1 - [\text{Prob of no hit} + \text{Prob of 1 hit}]$.

$$= 1 - \left(\frac{3}{8} \times \frac{2}{5} \times \frac{1}{2} + \frac{5}{8} \times \frac{2}{5} \times \frac{1}{2} + \frac{3}{8} \times \frac{3}{5} \times \frac{1}{2} + \frac{3}{8} \times \frac{2}{5} \times \frac{1}{2} \right)$$

$$= 1 - \frac{31}{80} = \frac{49}{80}$$

133. If $\frac{1}{2} \log x + \frac{1}{2} \log y + \log 2 = \log(x + y)$, then

A $x = -y$

B $x = y + 1$

C $x = y$

D $y = x + 1$

Answer: C

Explanation:

$$m \log(a) + n \log(b) = \log(a^{\frac{1}{m}} \cdot b^{\frac{1}{n}})$$

Therefore the given LHS reduces to $\log(2\sqrt{xy})$ which is equal to $\log(x+y)$

Remove log on both sides

$$2\sqrt{xy} = x+y$$

$$(\sqrt{x})^2 + (\sqrt{y})^2 - 2\sqrt{x \cdot y} = 0$$

$$(\sqrt{x} - \sqrt{y})^2 = 0$$

$$\Rightarrow x=y$$

134. $\log_5 25 + \log_2 (\log_3 81)$ is

A 1

B 2

C 3

D 4

Answer: D

Explanation:

$$\log(a^m) = m \log(a) \text{ and } \log_a a = 1$$

$$\log_5 5^2 + \log_2 (\log_3 3^4)$$

$$2 + \log_2 4$$

$$2 + \log_2 2^2$$

$$4$$

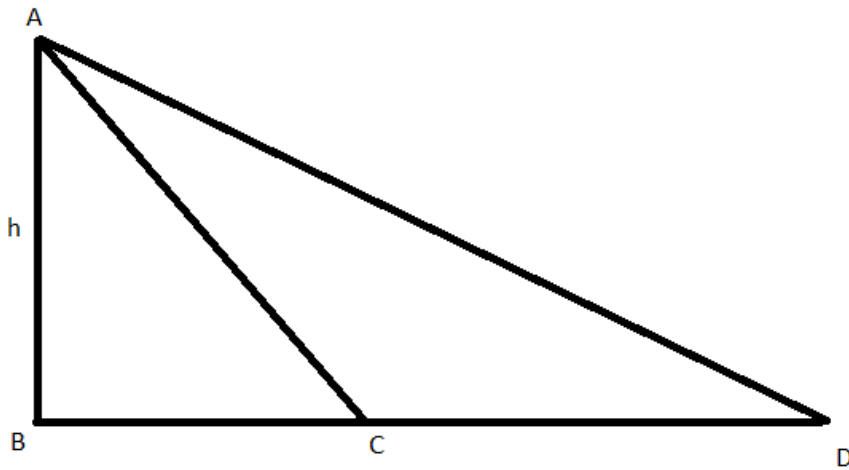
135. Peter was standing on the top of a rock cliff facing the sea. He saw a boat coming towards the shore. As he kept seeing time just flew. Ten minutes less than half of an hour, the angle of depression changed from 30 to 60. How much more time in minutes will the boat take to reach the shore ?

- A** 5
B 10
C 15
D 20

Answer: B

Explanation:

Let AB represent the rock cliff with its height be h



D represents the initial point and C is the point at which he observes the boat after Ten minutes less than half of an hour (20 minutes).

$$BD = \tan(30) \cdot h = \sqrt{3}h$$

$$BC = \tan(60) \cdot h = \frac{h}{\sqrt{3}}$$

$$\text{In 20 minutes boat covered CD length which is } = \sqrt{3}h - \frac{h}{\sqrt{3}} = \frac{2h}{\sqrt{3}}$$

Hence remaining length $\frac{h}{\sqrt{3}}$ (BC) will be covered in 10 minutes

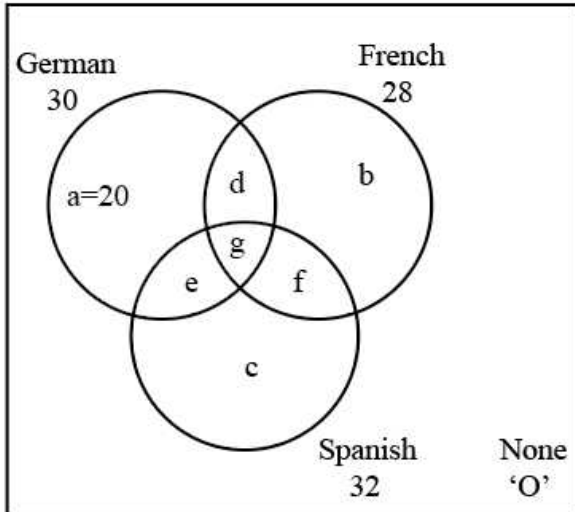
136. In a school where there was a compulsion to learn at least one foreign language from the choice given to them, namely German, French and Spanish. Twenty eight students took French, thirty took German and thirty two took Spanish. Six students learnt French and German, eight students learnt German and Spanish, ten students learnt French and Spanish. Fifty four students learnt only one foreign language while twenty students learnt only German. Find the number of students in the school.

- A** 60

- B** 62
- C** 70
- D** none of the above

Answer: C

Explanation:



Exactly 1 subject = $a+b+c$ $\rightarrow$ Represented by X

Exactly 2 subjects = $d+e+f$ $\rightarrow$ Represented by Y

Exactly 3 subjects = g $\rightarrow$ Represented by Z

So $X + Y + Z + \text{none} = \text{total}$ $\rightarrow$ (I)

German + French + Spanish = $(a+b+c) + 2(d+e+f) + 3(g) = X + 2Y + 3Z$ $\rightarrow$ (II)

So $X + 2Y + 3Z = 30 + 28 + 32 = 90$

Given $X = 54$

So $2Y + 3Z = 36$ $\rightarrow$ (1)

Given ,

French and German = 6 $\Rightarrow d+g = 6$

German and Spanish = $e+g = 8$

French and Spanish = $f+g = 10$

adding all the three $(d+e+f) + 3g = 24$

$Y + 3Z = 24$ $\rightarrow$ (2)

solving 1 and 2 you get $Y=12$ and $Z=4$

Therefore Total = $X+Y+Z+\text{None} = 54+12+4=70$

137. **Sonali can solve 70% of the problems in a competitive exam and Nirali can solve only 60% in the same exam. What is the probability that at least one of them will solve a problem, provided selection of questions is done randomly from the same exam ?**

- A** 0.82

B 0.88

C 0.62

D 0.72

Answer: B

Explanation:

$P(\text{atleast 1 solved}) = 1 - P(\text{no one solved})$

$$= 1 - (1 - 0.7) \times (1 - 0.6)$$

$$= 1 - (0.3) \times (0.4)$$

$$= 1 - 0.12$$

$$= 0.88$$

138. Rs. XYZ was deposited at simple interest at a specific rate for 3 years. Had it been deposited at 2% higher rate, it would have fetched Rs. 360 more. Find Rs. XYZ.

A Rs. 5500

B Rs. 5000

C Rs. 6000

D Rs. 4500

Answer: C

Explanation:

Let the rate of interest be $x\%$ and Principal amount be P

$$\text{Simple interest in 1st case} = \frac{(P \cdot 3 \cdot X)}{100}$$

$$\text{Simple interest in 2nd case} = \frac{(P \cdot 3 \cdot (X + 2))}{100}$$

Given the difference is 360

$$\frac{(3 \cdot P)}{100} (X + 2 - X) = 360$$

So on solving we get $P = 6000$.

139. A man invests certain amount at 6% per annum simple interest and another amount at 7% per annum simple interest. His income from the interest after 2 years was Rs. 348. The ratio of first amount to second is 4:5. Find the total amount invested.

A Rs. 2600

B Rs. 2900

C Rs. 2700

D none of the above

Answer: D

Explanation:

Let the total amount invested be $9x$

So the interest for 2 years on $4x$ amount = $\frac{(4x \times 2 \times 6)}{100}$

the interest for 2 years on $5x$ amount = $\frac{(5x \times 2 \times 7)}{100}$

Given, Sum of these = 348

$$1.18x = 348 \Rightarrow x \simeq 295$$

So total amount invested = 2655

140. **A person has a bag which contains 9 bulbs out of which 2 are fused and cannot be used to lighten the room. Two bulbs are selected at random. What is the probability that all the two bulbs chosen can be used to lighten the room ?**

A $\frac{5}{12}$

B $\frac{7}{12}$

C $\frac{9}{12}$

D $\frac{10}{12}$

Answer: B

Explanation:

Probability = Number of favourable cases/ total number of cases

favourable cases = ${}^7C_2$

total cases = ${}^9C_2$

Probability = $\frac{{}^7C_2}{{}^9C_2} = 7/12$

141. **The value of $(p-a) * (p-b) * (p-c) \dots \dots \dots * (p-z)$ is _____**

A A complex polynomial which starts with p^{24}

B Zero

C A complex polynomial which starts with p^{26}

D A complex polynomial which has several variables including p^{26} and p^{24}

Answer: D

Explanation:

If the question would have been "can be", then all the options would have been correct but since it has been given as 'is', only option d satisfies.

Option A: The polynomial can start with any power of p. The order of powers of p does not make any difference.

Option B: It is possible only when $p = a$ or b or c or z

Option C: The polynomial can start with any power of p. The order of powers of p does not make any difference.

Option D: This is true in all the cases.

142. There are nine humans in a ship, each human has nine cages and each cage has nine huge lions and each lion has nine cubs. How many legs are there in the ship ? (Human have two legs, lions have four legs, cubs have four legs.)

- A 747
- B 3258
- C 29178
- D 26561

Answer: C

Explanation:

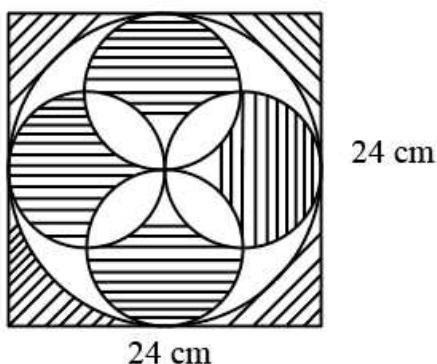
Total number of humans = 9 $\Rightarrow$ total legs = $9 \times 2 = 18$

Total number of lions = $9 \times 9 \times 9 \Rightarrow$ total legs = $9 \times 9 \times 9 \times 4 = 2916$

Total number of cubs = $9 \times 9 \times 9 \times 9 \Rightarrow$ total legs = $9 \times 9 \times 9 \times 9 \times 4 = 26244$

So total legs = 29178

143. As shown in the figure, there is a square of 24 cm. A circle is inscribed inside the square. Inside the circle are four circles of equal radius which are inscribed. The total area of the shaded region in the figure given below is _____



- A $576 - 196\pi$
- B $584 - 196\pi$

- C** $864 - 196\pi$
- D** none of the above

Answer: D

Explanation:

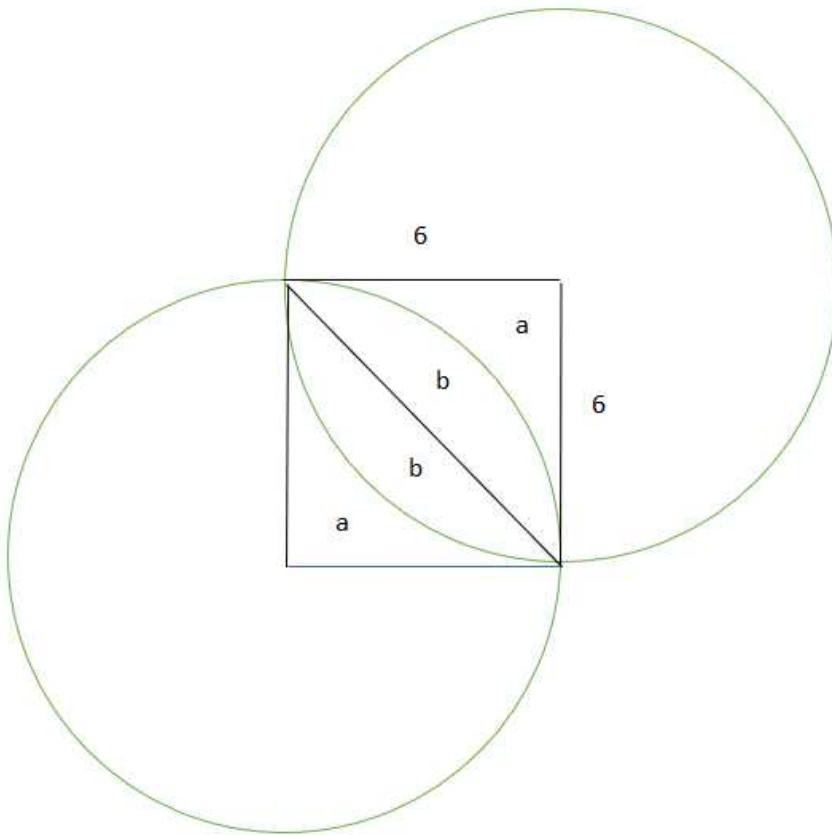
The above area can be obtained by the following operation: Area of Big Square - Area of the Bigger circle + $4 \times$ Area of Smaller Circle + $8 \times$ Overlapping Area of smaller circles

i) Area of Big Square = $24 \times 24 = 576$

ii) Area of Big circle = $\pi 12^2 = 144\pi$

iii) Area of smaller circle = $\pi 6^2 = 36\pi$

iv) For Area of smaller common area = $2b$ from below figure



Area b = Area of circular arc $(2b+a)$ - Area of triangle $(a+b)$

$$= \frac{1}{4} (36\pi) - \frac{1}{2} (6 \times 6) = 9\pi - 18$$

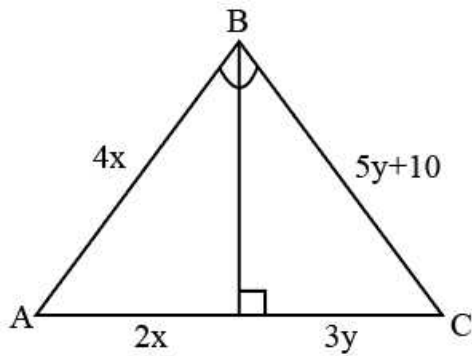
Area of common part of smaller circle = $2b = 18\pi - 36$

Therefore required area = $576 - 144\pi + (4 \times 36\pi) - 8 \times (18\pi - 36)$

$$= 288 + 144\pi$$

None of the above are correct

144. In the figure given below the value of x and y would be _____



- A 10 and 15
- B 15 and 10
- C 06 and 12
- D 12 and 06

Answer: B

Explanation:

Let the point between A and C be D

Triangle ABD and Triangle BCD are congruent using ASA congruency

Therefore $2x=3y$ and $4x=5y+10$

On solving $X=15$ and $Y=10$

145. Mr. Suresh went into a restaurant and had a happy lunch for Rs.162. He paid for the same using a 500 rupee note. He was so happy with the meal and hence purchased a mini snack box for Rs. 37 and paid for the same using a 100 rupee note. Mr. Suresh ensured that he collected the balance from the cashier in both cases. Although he was satisfied with the service, he did not pay any tips to the server. The next day when the cashier went and deposited the money in the bank, it was found by the banker that only the two currency notes which were given by Mr. Suresh were counterfeit notes. As per policy, the bank immediately tore both the notes using their shredding machine. What is the total loss to the restaurant in this transaction ?

- A 1200
- B 600
- C 7991
- D none of the above

Answer: B

Explanation:

Total loss would be = Cost of food + Change that restaurant has given suresh

$$= 162+37 + 338+63=600$$

146. If $2^x + 2^{x+1} = 48$, then the value of x^x is

- A** 4
- B** 64
- C** 256
- D** 16

Answer: C

Explanation:

$$2^x + 2^x \cdot 2 = 48$$

$$2^x (1 + 2) = 48$$

$$2^x = 16$$

$$x=4$$

$$4^4 = 256$$

Instructions [147 - 150]

Following table shows the percentage population of six states below poverty line and proportion of male and female.

State	% Population below poverty line	Proportion of male & female	
		Below Poverty line	Above Poverty line
		M:F	M:F
A	16	2:3	3:4
B	10	4:3	5:2
C	14	3:4	2:3
D	20	5:2	4:3
E	25	4:1	2:1
F	20	2:3	4:1

147. If the total population of state A is 5000 then what is the no. of females above poverty line in state A?

- A** 2000
- B** 2400
- C** 2600
- D** data inadequate

Answer: B

Explanation:

Total population of A=5000

Population of A below poverty line = 16% $\Rightarrow$ population of A above poverty line = 84% = 4200

Number of females above poverty line in A = $\frac{4}{7} \cdot 4200 = 2400$

148. If the population of C&D together is 20000 what is the total no. of females below poverty line in the above states?

- A 5000
- B 6000
- C 7200
- D NOTA

Answer: D

Explanation:

Since the individual populations of C and D aren't given, the number of females below poverty line cannot be determined.

149. If the population of males below poverty line in state C is 6000 & state E 1000 then what is the ratio of the total population of state C& E is

- A 2 : 1
- B 3 : 5
- C 11 : 5
- D NOTA

Answer: D

Explanation:

Let total population of C and E be 100x and 100y respectively.

Number of males below poverty line in C = $\frac{3}{7} \cdot 14x = 6x = 6000 \Rightarrow x=1000$

Number of males below poverty line in E = $\frac{4}{5} \cdot 25y = 20y=1000 \Rightarrow y= 50$

Hence ratio = 20:1

150. If in state F population of females below poverty line is 16000, then what is the population of males below poverty line in that state?

- A 8000
- B 6000
- C 12000

D NOTA

Answer: D

Explanation:

Let total population of F be $100x$

Population below poverty line = $20x$

Females below poverty line = $\frac{3}{5} \cdot 20x = 12x = 16000$

$\Rightarrow x = 1333.333$

Males below poverty line = $\frac{2}{5} \cdot 20x = 8x = 10666.66$