

Combined Graduate Level Examination 2019 Tier II

Roll Number	
Venue Name	TCS Gito Bitan
Exam Date	15/11/2020
Exam Time	10:00 AM - 12:00 PM
Subject	CGLE Tier II Paper I Quantitative abilities

Section : Quantitative abilities

Q.1 In $\triangle ABC$, $\angle A = 90^\circ$, AD is the bisector of $\angle A$ meeting BC at D, and $DE \perp AC$ at E. If $AB = 10$ cm and $AC = 15$ cm, then the length of DE, in cm, is:

- Ans
- 1. 8
 - 2. 6
 - 3. 6.25
 - 4. 7.5

Question ID : 8161615340

Status : Not Answered

Chosen Option : --

Q.2 A and B are solutions of acid and water. The ratios of water and acid in A and B are 4 : 5 and 1 : 2, respectively. If x litres of A is mixed with y litres of B, then the ratio of water and acid in the mixture becomes 8 : 13. What is $x : y$?

- Ans
- 1. 5 : 6
 - 2. 2 : 5
 - 3. 3 : 4
 - 4. 2 : 3

Question ID : 8161615316

Status : Answered

Chosen Option : 3

Q.3 A can do a piece of work in 15 days. B is 25% more efficient than A, and C is 40% more efficient than B. A and C work together for 3 days and then C leaves. A and B together will complete the remaining work in:

- Ans
- 1. 3 days
 - 2. $2\frac{1}{2}$ days
 - 3. 4 days
 - 4. $3\frac{1}{2}$ days

Question ID : 8161615324

Status : Answered

Chosen Option : 1

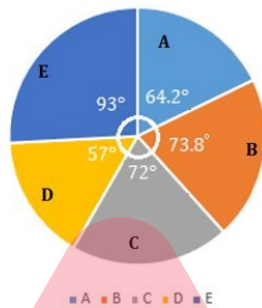
Q.4 The sum of the present ages of a father and son is 52 years. Four years hence, the son's age will be $\frac{1}{4}$ that of the father. What will be the ratio of the ages of the son and father, 10 years from now?

- Ans**
- 1. 2 : 7
 - 2. 2 : 5
 - 3. 1 : 3
 - 4. 3 : 8

Question ID : **8161615292**
 Status : **Answered**
 Chosen Option : **3**

Q.5 Study the given graph and answer the question that follows.

Break up for distribution (degree wise) of the employees working in five departments (A, B, C, D and E) in a company



Total number of employees = 3000

The total number of employees working in departments A and C exceeds the total number of employees working in departments B and D by x . The value of x lies between:

- Ans**
- 1. 36 and 44
 - 2. 28 and 36
 - 3. 44 and 52
 - 4. 20 and 28

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Question ID : **8161615375**
 Status : **Answered**
 Chosen Option : **3**

Q.6 In $\triangle ABC$, the bisector of $\angle A$ intersects side BC at D . If $AB = 12$ cm, $AC = 15$ cm and $BC = 18$ cm, then the length of BD is:

- Ans**
- 1. 7.5 cm
 - 2. 8 cm
 - 3. 9.6 cm
 - 4. 9 cm

Question ID : **8161615339**
 Status : **Answered**
 Chosen Option : **2**

Q.7 The height of a solid cylinder is 30 cm and the diameter of its base is 10 cm. Two identical conical holes each of radius 5 cm and height 12 cm are drilled out. What is the surface area (in cm^2) of the remaining solid?

- Ans**
- 1. 430π
 - 2. 230π
 - 3. 330π
 - 4. 120π

Question ID : **8161615355**
 Status : **Answered**
 Chosen Option : 1

Q.8 On selling an article for ₹123.40, the gain is 20% more than the amount of loss incurred on selling it for ₹108. If the article is sold for ₹120.75, then what is the gain/loss per cent?

- Ans**
- 1. Loss 2.5%
 - 2. Loss 5%
 - 3. Gain 2.5%
 - 4. Gain 5%

Question ID : **8161615309**
 Status : **Answered**
 Chosen Option : 4

Q.9 The value of $3 \div 18$ of $3 \times 6 + 21 \times 6 \div 18 - 3 \div 2 + 3 - 3 \div 9$ of 3×9 is:

- Ans**
- 1. $\frac{29}{6}$
 - 2. $\frac{41}{9}$
 - 3. $\frac{35}{9}$
 - 4. $\frac{47}{6}$

Question ID : **8161615279**
 Status : **Answered**
 Chosen Option : 4

Q.10 If $27(x+y)^3 - 8(x-y)^3 = (x+5y)(Ax^2 + By^2 + Cxy)$, then what is the value of $(A+B-C)$?

- Ans**
- 1. 18
 - 2. 16
 - 3. 13
 - 4. 11

Question ID : **8161615327**
 Status : **Answered**
 Chosen Option : 2

Q.11 If $\frac{45}{53} = \frac{1}{a + \frac{1}{b + \frac{1}{c - \frac{2}{5}}}}$, where a, b and c are positive integers, then what is the value of $(4a - b + 3c)$?

- Ans
- 1. 6
 - 2. 4
 - 3. 5
 - 4. 7

Question ID : 8161615287
Status : Answered
Chosen Option : 3

Q.12 Remi earns a profit of 20% on selling an article at a certain price. If she sells the articles for ₹8 more, she will gain 30%. What is the original cost price of 16 such articles?

- Ans
- 1. ₹1,152
 - 2. ₹1,120
 - 3. ₹1,280
 - 4. ₹1,200

Question ID : 8161615308
Status : Answered
Chosen Option : 3

Q.13 The area of the base of a right circular cone is 81π cm² and its height is 12 cm. What is the curved surface area (in cm²) of the cone?

- Ans
- 1. 126π
 - 2. 135π
 - 3. 108π
 - 4. 144π

Question ID : 8161615350
Status : Answered
Chosen Option : 2

Q.14 A certain number of students from school X appeared in an examination and 30% students failed. 150% more students than those from school X, appeared in the same examination from school Y. If 80% of the total number of students who appeared from X and Y passed, then what is the percentage of students who failed from Y?

- Ans
- 1. 24
 - 2. 20
 - 3. 16
 - 4. 18

Question ID : 8161615297
Status : Not Answered
Chosen Option : --

Q.15 Surekha borrowed a sum of money and returned it in two equal annual instalments of ₹5,547 each. If the rate of interest was $7\frac{1}{2}\%$ p.a. compounded yearly, then the total interest paid by her was:

- Ans**
- 1. ₹1,144
 - 2. ₹1,096
 - 3. ₹1,126
 - 4. ₹1,134

Question ID : 8161615305
Status : Answered
Chosen Option : 4

Q.16 In ΔPQR , O is the incentre and $\angle P = 42^\circ$. Then what is the measure of $\angle QOR$?

- Ans**
- 1. 138°
 - 2. 132°
 - 3. 111°
 - 4. 121°

Question ID : 8161615335
Status : Answered
Chosen Option : 3

Q.17 A sold a watch to B at a profit of 20%. B sold it to C at 30% profit. C sold it to D at 10% loss. If B's profit is ₹80 more than that of A, then D bought it for:

- Ans**
- 1. ₹700
 - 2. ₹680
 - 3. ₹652
 - 4. ₹702

Question ID : 8161615307
Status : Answered
Chosen Option : 4

Q.18 Study the given graph and answer the question that follows.



In which year was the revenue $33\frac{1}{3}\%$ more than the average expenditure of the company during 2014 to 2019?

- Ans**
- 1. 2015
 - 2. 2016
 - 3. 2018
 - 4. 2017

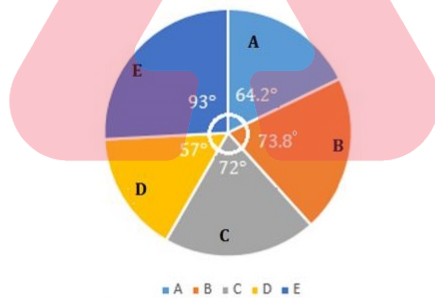
Question ID : 8161615372

Status : Answered

Chosen Option : 2

Q.19 Study the given graph and answer the question that follows.

Break up for distribution (degree wise) of the employees working in five departments (A, B, C, D and E) in a company



Total number of employees = 3000

The number of employees in department B is what per cent of the total number of employees working in departments D and E?

- Ans**
- 1. 50.4
 - 2. 45.8
 - 3. 48.6
 - 4. 49.2

Question ID : 8161615376

Status : Answered

Chosen Option : 4

Q.20 Rishu saves $x\%$ of her income. If her income increases by 26% and the expenditure increases by 20%, then her savings increase by 50%. What is the value of x ?

- Ans**
- 1. 25
 - 2. 30
 - 3. 20
 - 4. 10

Question ID : 8161615296

Status : Answered

Chosen Option : 3

Q.21 If $a + b + c = 6$, $a^3 + b^3 + c^3 - 3abc = 342$, then what is the value of $ab + bc + ca$?

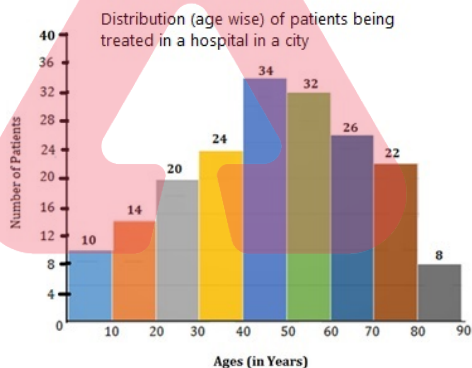
- Ans**
- 1. 5
 - 2. 8
 - 3. -7
 - 4. -5

Question ID : 8161615330

Status : Answered

Chosen Option : 3

Q.22 Study the given graph and answer the question that follows.



The number of patients aged 10 or more years but below 40 years is what per cent less than the number of patients aged 50 or more years but below 80 years?

- Ans**
- 1. 30.2
 - 2. 25
 - 3. 34
 - 4. 27.5

Question ID : 8161615371

Status : Answered

Chosen Option : 4

Q.23

The value of $\frac{\cos^6\theta + \sin^6\theta + 3\sin^2\theta \cos^2\theta}{\operatorname{cosec}\theta \sec\theta (\sin\theta + \cos\theta - 1)(\sin\theta + \cos\theta + 1)}$ is:

- Ans
- 1. 3
 - 2. 2
 - 3. 1
 - 4. $\frac{1}{2}$

Question ID : 8161615364

Status : Answered

Chosen Option : 4

Q.24

In a circle with centre O, a diameter AB is produced to a point P lying outside the circle and PT is a tangent to the circle at the point T. If $\angle BPT = 36^\circ$, then what is the measure of $\angle BCP$?

- Ans
- 1. 24°
 - 2. 18°
 - 3. 36°
 - 4. 27°

Question ID : 8161615345

Status : Answered

Chosen Option : 4

Q.25

In $\triangle ABC$, $\angle C = 90^\circ$. Points P and Q are on the sides AC and BC, respectively, such that $AP : PC = BQ : QC = 1 : 2$.

Then, $\frac{AQ^2 + BP^2}{AB^2}$ is equal to:

- Ans
- 1. $\frac{8}{3}$
 - 2. $\frac{4}{3}$
 - 3. $\frac{13}{9}$
 - 4. $\frac{4}{9}$

Question ID : 8161615334

Status : Answered

Chosen Option : 3

Q.26 In $\triangle ABC$, $\angle A - \angle B = 33^\circ$, $\angle B - \angle C = 18^\circ$.

What is the sum of the smallest and the largest angles of the triangle?

- Ans
- 1. 125°
 - 2. 143°
 - 3. 92°
 - 4. 108°

Question ID : 8161615336
Status : Not Answered
Chosen Option : --

Q.27 A person divided a certain sum between his three sons in the ratio 3 : 4 : 5. Had he divided the sum in the ratio $\frac{1}{3} : \frac{1}{4} : \frac{1}{5}$, the son, who got the least share earlier, would have got ₹1,188 more. The sum (in ₹) was:

- Ans
- 1. 6,768
 - 2. 5,640
 - 3. 7,008
 - 4. 6,840

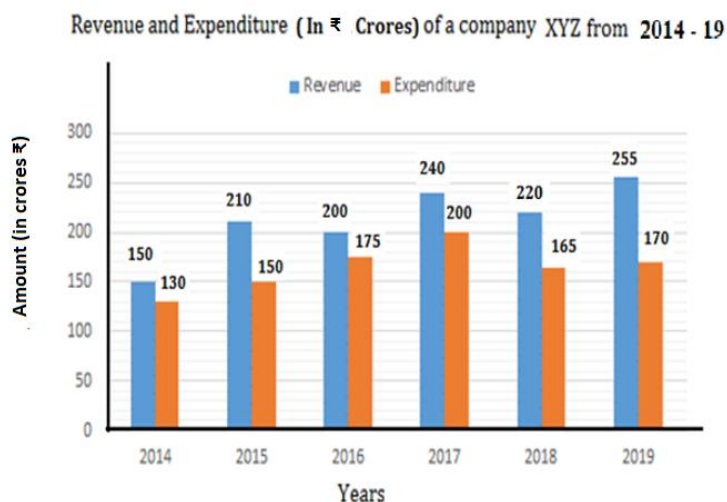
Question ID : 8161615300
Status : Not Answered
Chosen Option : --

Q.28 If the 5-digit number 535ab is divisible by 3, 7 and 11, then what is the value of $(a^2 - b^2 + ab)$?

- Ans
- 1. 77
 - 2. 89
 - 3. 95
 - 4. 83

Question ID : 8161615280
Status : Answered
Chosen Option : 3

Q.29 Study the given graph and answer the question that follows.



In how many years was the profit (Revenue – Expenditure) as a percentage of the revenue, more than 25%?

- Ans**
- 1. 4
 - 2. 2
 - 3. 1
 - 4. 3

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Question ID : **8161615373**
 Status : **Answered**
 Chosen Option : 4

Q.30 A person has to cover a distance of 160 km in 15 hours. If he covers $\frac{4}{5}$ of the distance in $\frac{2}{3}$ of the time, then what should be his speed (in km/h) to cover the remaining distance in the remaining time?

- Ans**
- 1. 6
 - 2. 8
 - 3. 6.4
 - 4. 6.5

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Question ID : **8161615318**
 Status : **Answered**
 Chosen Option : 1

Q.31 If the radius of the base of a right circular cylinder is increased by 20% and the height is decreased by 30%, then what is the percentage increase/decrease in the volume?

- Ans**
- 1. Decrease 0.8%
 - 2. Increase 2%
 - 3. Increase 0.8%
 - 4. Decrease 2%

Question ID : **8161615356**
 Status : **Answered**
 Chosen Option : 3

Q.32 When 1062, 1134 and 1182 are divided by the greatest number x , the remainder in each case is y . What is the value of $(x - y)$?

- Ans**
- 1. 17
 - 2. 18
 - 3. 16
 - 4. 19

Question ID : **8161615282**
Status : **Answered**
Chosen Option : **2**

Q.33 X and Y enter into a partnership with capital in the ratio 3 : 5. After 5 months X adds 50% of his capital, while Y withdraws 60% of his capital. What is the share (in ₹ lakhs) of X in the annual profit of ₹6.84 lakhs?

- Ans**
- 1. 3.72
 - 2. 3.6
 - 3. 4.2
 - 4. 3.12

Question ID : **8161615314**
Status : **Answered**
Chosen Option : **1**

Q.34 The compound interest on a sum of ₹5,500 at 15% p.a. for 2 years, when the interest is compounded 8 monthly, is:

- Ans**
- 1. ₹1,850
 - 2. ₹1,880
 - 3. ₹1,820.50
 - 4. ₹1,773.75

Question ID : **8161615304**
Status : **Answered**
Chosen Option : **3**

Q.35 The average of three numbers a , b and c is 2 more than c . The average of a and b is 48. If d is 10 less than c , then the average of c and d is:

- Ans**
- 1. 38
 - 2. 35
 - 3. 36
 - 4. 40

Question ID : **8161615325**
Status : **Answered**
Chosen Option : **4**

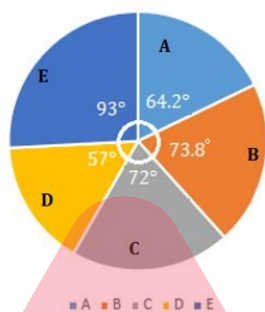
Q.36 A and B start moving towards each other from places X and Y, respectively, at the same time on the same day. The speed of A is 20% more than that of B. After meeting on the way, A and B take p hours and $7\frac{1}{5}$ hours, respectively, to reach Y and X, respectively. What is the value of p ?

- Ans
- 1. 4.5
 - 2. 5
 - 3. 5.5
 - 4. 6

Question ID : 8161615320
 Status : Not Answered
 Chosen Option : --

Q.37 Study the given graph and answer the question that follows.

Break up for distribution (degree wise) of the employees working in five departments (A, B, C, D and E) in a company



Total number of employees = 3000

If 20% of the employees working in department E are transferred to department A, then the difference between the number of employees in A and 124% of the employees working in department C is:

- Ans
- 1. 54
 - 2. 50
 - 3. 60
 - 4. 64



Question ID : 8161615377
 Status : Answered
 Chosen Option : 1

Q.38 In a circle with centre O, BC is a chord. Points D and A are on the circle, on the opposite side of BC, such that $\angle DBC = 28^\circ$ and $BD = DC$. What is the measure of $\angle BOC$?

- Ans
- 1. 98°
 - 2. 84°
 - 3. 112°
 - 4. 96°

Question ID : 8161615343
 Status : Not Answered
 Chosen Option : --

Q.39 The sides BA and DE of a regular pentagon are produced to meet at F. What is the measure of $\angle EFA$?

- Ans
- 1. 60°
 - 2. 36°
 - 3. 72°
 - 4. 54°

Question ID : 8161615347
Status : Answered
Chosen Option : 2

Q.40 Anuja owns $66\frac{2}{3}\%$ of a property. If 30% of the property that she owns is worth ₹1,25,000, then 45% of the value (in ₹) of the property is:

- Ans
- 1. 2,70,000
 - 2. 2,81,250
 - 3. 2,25,000
 - 4. 2,62,500

Question ID : 8161615295
Status : Answered
Chosen Option : 2

Q.41 In ΔPQR , $\angle Q = 90^\circ$. If $\cot R = \frac{1}{3}$, then what is the value of $-\frac{\sec P(\cos R + \sin P)}{\operatorname{cosec} R(\sin R - \operatorname{cosec} P)}$?

- Ans
- 1. $\frac{2}{3}$
 - 2. $-\frac{2}{3}$
 - 3. $-\frac{2}{7}$
 - 4. $\frac{2}{7}$

Question ID : 8161615366
Status : Answered
Chosen Option : 3

Q.42 $\cos A(\sec A - \cos A)(\cot A + \tan A) = ?$

- Ans
- 1. $\tan A$
 - 2. $\cot A$
 - 3. $\sec A$
 - 4. $\sin A$

Question ID : 8161615361
Status : Answered
Chosen Option : 1

Q.43 In a school, $\frac{3}{8}$ of the number of students are girls and the rest are boys. One-third of the number of boys are below 10 years and $\frac{2}{3}$ of the number of girls are also below 10 years. If the number of students of age 10 or more years is 260, then the number of boys in the school is:

- Ans**
- 1. 312
 - 2. 234
 - 3. 300
 - 4. 280

Question ID : **8161615286**
 Status : **Not Answered**
 Chosen Option : --

Q.44 If $3x^2 - 5x + 1 = 0$, then the value of $(x^2 + \frac{1}{9x^2})$ is:

- Ans**
- 1. $1\frac{2}{3}$
 - 2. $1\frac{1}{3}$
 - 3. $2\frac{1}{9}$
 - 4. $2\frac{1}{3}$

SSC

Question ID : **8161615329**
 Status : **Answered**
 Chosen Option : 3

Q.45 The graphs of the equations $3x - 20y - 2 = 0$ and $11x - 5y + 61 = 0$ intersect at P(a,b). What is the value of $(a^2 + b^2 - ab)/(a^2 - b^2 + ab)$?

- Ans**
- 1. $\frac{37}{35}$
 - 2. $\frac{5}{7}$
 - 3. $\frac{31}{41}$
 - 4. $\frac{41}{31}$

Question ID : **8161615332**
 Status : **Marked For Review**
 Chosen Option : 3

Q.46 A, B and C started a business. Twice the investment of A is equal to thrice the investment of B and also five times the investment of C. If the total profit after a year is ₹15.5 lakhs, then the share of B in the profit is (in ₹ lakhs):

- Ans
- 1. 7.5
 - 2. 3
 - 3. 4.5
 - 4. 5

Question ID : **8161615313**
 Status : **Answered**
 Chosen Option : 4

Q.47 The expression $\frac{15(\sqrt{10}+\sqrt{5})}{\sqrt{10}+\sqrt{20}+\sqrt{40}-\sqrt{5}-\sqrt{80}}$ is equal to:

- Ans
- 1. $10(3 + 2\sqrt{5})$
 - 2. $5 + 2\sqrt{2}$
 - 3. $5(3 + 2\sqrt{2})$
 - 4. $5 - 2\sqrt{5}$

Question ID : **8161615290**
 Status : **Answered**
 Chosen Option : 3

Q.48 The value of $\frac{0.0203 \times 2.92}{0.7 \times 0.0365 \times 2.9} \div \frac{(12.12)^2 - (8.12)^2}{(0.25)^2 + (0.25)(19.99)}$ is:

- Ans
- 1. 0.05
 - 2. 0.5
 - 3. 0.01
 - 4. 0.1

Question ID : **8161615284**
 Status : **Not Answered**
 Chosen Option : --

Q.49 A spherical metallic shell with 6 cm external radius weighs 6688 g. What is the thickness of the shell if the density of metal is 10.5 g per cm³?

(Take $\pi = \frac{22}{7}$)

- Ans
- 1. 4 cm
 - 2. $2\frac{1}{2}$ cm
 - 3. 3 cm
 - 4. 2 cm

Question ID : **8161615354**
 Status : **Answered**
 Chosen Option : 4

Q.50 A can do 20% of a work in 4 days, B can do $33\frac{1}{3}\%$ of the same work in 10 days. They worked together for 9 days. C completed the remaining work in 6 days. B and C together will complete 75% of the same work in:

- Ans**
- 1. 9 days
 - 2. 15 days
 - 3. 10 days
 - 4. 12 days

Question ID : **8161615321**
 Status : **Answered**
 Chosen Option : **3**

Q.51 The marked price of an article is 40% above its cost price. If its selling price is $73\frac{1}{2}\%$ of the marked price, then the profit percentage is:

- Ans**
- 1. 2.4%
 - 2. 2.9%
 - 3. 3.1%
 - 4. 2.7%

Question ID : **8161615310**
 Status : **Answered**
 Chosen Option : **2**

Q.52 The base of a right pyramid is a square of side 10 cm. If its height is 10 cm, then the area (in cm^2) of its lateral surface is:

- Ans**
- 1. $50\sqrt{5}$
 - 2. 100
 - 3. $100\sqrt{5}$
 - 4. $100(\sqrt{5} + 1)$

Question ID : **8161615349**
 Status : **Answered**
 Chosen Option : **3**

Q.53 The area (in sq. units) of the triangle formed by the graphs of $8x + 3y = 24$, $2x + 8 = y$ and the x -axis is:

- Ans**
- 1. 28
 - 2. 14
 - 3. 15
 - 4. 24

Question ID : **8161615333**
 Status : **Answered**
 Chosen Option : **1**

Q.54 The value of $(2.\bar{4} \times 0.\bar{6} \times 3 \times 0.1\bar{6}) \times [0.\bar{27} \times (0.8\bar{3} \div 0.1\bar{6})]$ is:

- Ans
- 1. $0.\bar{11}$
 - 2. $1.\bar{1}$
 - 3. $1.\bar{36}$
 - 4. $0.\bar{814}$

Question ID : 8161615283
 Status : Not Answered
 Chosen Option : --

Q.55 Let $x = \left(\frac{\sqrt{1875}}{\sqrt{3888}} \div \frac{\sqrt{1200}}{\sqrt{768}} \right) \times \frac{\sqrt{175}}{\sqrt{1792}}$. Then \sqrt{x} is equal to:

- Ans
- 1. $\frac{5}{9}$
 - 2. $\frac{7}{12}$
 - 3. $\frac{5}{12}$
 - 4. $\frac{4}{9}$

SSC

Question ID : 8161615289
 Status : Not Answered
 Chosen Option : --

Q.56 Pipes A and B can fill a tank in 43.2 minutes and 108 minutes, respectively. Pipe C can empty it at 3 litres/minute. When all the three pipes are opened together, they fill the tank in 54 minutes. The capacity (in litres) of the tank is:

- Ans
- 1. 200
 - 2. 160
 - 3. 180
 - 4. 216

Question ID : 8161615322
 Status : Marked For Review
 Chosen Option : 4

Q.57 A certain sum amounts to ₹15,500 in 2 years at 12% p.a. simple interest. The same sum will amount to what in $1\frac{1}{2}$ years at 10% p.a., if the interest is compounded half yearly (nearest to ₹1)?

- Ans**
- 1. ₹14,470
 - 2. ₹15,125
 - 3. ₹14,360
 - 4. ₹13,460

Question ID : 8161615303
 Status : Not Answered
 Chosen Option : --

Q.58 If $(10a^3 + 4b^3) : (11a^3 - 15b^3) = 7 : 5$, then $(3a + 5b) : (9a - 2b) = ?$

- Ans**
- 1. 10 : 13
 - 2. 8 : 7
 - 3. 5 : 4
 - 4. 3 : 2

Question ID : 8161615298
 Status : Answered
 Chosen Option : 1

Q.59 If $(x + 20)\%$ of 250 is 25% more than $x\%$ of 220, then 10% of $(x + 50)$ is what per cent less than 15% of x ?

- Ans**
- 1. $16\frac{2}{3}$
 - 2. $8\frac{1}{3}$
 - 3. $13\frac{1}{3}$
 - 4. $33\frac{1}{3}$

Question ID : 8161615294
 Status : Not Answered
 Chosen Option : --

Q.60 If $\sin 3A = \cos(A+10^\circ)$, where $3A$ is an acute angle, then what is the value of $2\operatorname{cosec}\frac{3A}{2} + 6\sin^2 3A - \frac{3}{2}\tan^2 3A$?

- Ans**
- 1. 4
 - 2. $\frac{7}{4}$
 - 3. 5
 - 4. $\frac{17}{2}$

Question ID : 8161615368
 Status : Answered
 Chosen Option : 1

Q.61

The value of $\frac{\operatorname{cosec}^2 30^\circ \sin^2 45^\circ + \sec^2 60^\circ}{\tan 60^\circ \operatorname{cosec}^2 45^\circ - \sec^2 60^\circ \tan 45^\circ}$ is:

Ans

1. $-2\sqrt{3} - 2$

2. $-3(2 + \sqrt{3})$

3. $3(2 + \sqrt{3})$

4. $2(\sqrt{3} - 2)$

Question ID : 8161615367

Status : Answered

Chosen Option : 1

Q.62

A is 80% more than B and C is $48\frac{4}{7}\%$ less than the sum of A and B. By what per cent is C less than A?

Ans

1. 30

2. 15

3. 25

4. 20

Question ID : 8161615293

Status : Answered

Chosen Option : 4

Q.63

The value of $\frac{2 \sin^2 38^\circ \sec^2 52^\circ + \cos 64^\circ \sin 26^\circ + \sin^2 64^\circ}{\tan^2 23^\circ + \cot^2 23^\circ - \sec^2 67^\circ - \operatorname{cosec}^2 67^\circ}$ is:

Ans

1. $-\frac{3}{2}$

2. $\frac{3}{2}$

3. 2

4. -2

Question ID : 8161615369

Status : Answered

Chosen Option : 1

Q.64 How many kg of rice costing ₹42 per kg should be mixed with $7\frac{1}{2}$ kg rice costing ₹50 per kg so that by selling the mixture at ₹53.10 per kg, there is a gain of 18%?

- Ans
- 1. 9
 - 2. 8
 - 3. $10\frac{1}{2}$
 - 4. $12\frac{1}{2}$

Question ID : 8161615315
Status : Answered
Chosen Option : 4

Q.65 When positive numbers x , y and z are divided by 31, the remainders are 17, 24 and 27, respectively. When $(4x - 2y + 3z)$ is divided by 31, the remainder will be:

- Ans
- 1. 9
 - 2. 16
 - 3. 8
 - 4. 19

Question ID : 8161615278
Status : Answered
Chosen Option : 3

Q.66 The areas of three adjacent faces of a cuboidal tank are 3 m^2 , 12 m^2 and 16 m^2 . The capacity of the tank, in litres, is:

- Ans
- 1. 36000
 - 2. 72000
 - 3. 24000
 - 4. 48000

Question ID : 8161615359
Status : Answered
Chosen Option : 3

Q.67 Amit sold an article for ₹369.60 after allowing 12% discount on the marked price. Had he not allowed any discount he would have earned a profit of 20%. What is the cost price of the article?

- Ans
- 1. ₹350
 - 2. ₹400
 - 3. ₹380
 - 4. ₹320

Question ID : 8161615312
Status : Answered
Chosen Option : 1

Q.68 ABCD is a cyclic quadrilateral. Diagonals BD and AC intersect each other at E. If $\angle BEC = 128^\circ$ and $\angle ECD = 25^\circ$, then what is the measure of $\angle BAC$?

- Ans**
- 1. 98°
 - 2. 52°
 - 3. 93°
 - 4. 103°

Question ID : 8161615344

Status : Answered

Chosen Option : 4

Q.69 The lengths of two sides of a parallelogram are 3 cm and 10 cm. What is the sum of the squares of the diagonals of the parallelogram?

- Ans**
- 1. 218 cm^2
 - 2. 109 cm^2
 - 3. 169 cm^2
 - 4. 206 cm^2

Question ID : 8161615346

Status : Answered

Chosen Option : 1

Q.70 If $\sec\theta = \frac{a}{b}$, $b \neq 0$, then $\frac{1-\tan^2\theta}{2-\sin^2\theta} = ?$

- Ans**
- 1. $\frac{b^2(2b^2 - a^2)}{a^2(a^2 + b^2)}$
 - 2. $\frac{a^2(2b^2 - a^2)}{b^2(a^2 + b^2)}$
 - 3. $\frac{a^2(2b^2 + a^2)}{b^2(a^2 + b^2)}$
 - 4. $\frac{a^2(2b^2 + a^2)}{b^2(a^2 - b^2)}$

SSC

adda247

Question ID : 8161615365

Status : Answered

Chosen Option : 2

Q.71 Two positive numbers differ by 1280. When the greater number is divided by the smaller number, the quotient is 7 and the remainder is 50. The greater number is:

- Ans**
- 1. 1558
 - 2. 1458
 - 3. 1585
 - 4. 1485

Question ID : **8161615281**
 Status : **Answered**
 Chosen Option : 4

Q.72 $\left(\frac{1}{\cos\theta} - \frac{1}{\sin\theta}\right) + \frac{1}{\operatorname{cosec}\theta - \cot\theta} - \frac{1}{\sec\theta + \tan\theta} = ?$

- Ans**
- 1. $\sin\theta \cos\theta$
 - 2. $\sin\theta \tan\theta$
 - 3. $\sec\theta \operatorname{cosec}\theta$
 - 4. $\operatorname{cosec}\theta \cot\theta$

Question ID : **8161615363**
 Status : **Not Answered**
 Chosen Option : --

Q.73 If $9x^2 + y^2 = 37$ and $xy = 2$, $x, y > 0$, then the value of $(27x^3 + y^3)$ is:

- Ans**
- 1. 301
 - 2. 217
 - 3. 207
 - 4. 259

Question ID : **8161615328**
 Status : **Answered**
 Chosen Option : 2

Q.74 As observed from the top of a light house, $120\sqrt{3}$ m above the sea level, the angle of depression of a ship sailing towards it changes from 30° to 60° . The distance travelled by the ship during the period of observation is:

- Ans**
- 1. $240\sqrt{3}$ m
 - 2. $180\sqrt{3}$ m
 - 3. 180 m
 - 4. 240 m

Question ID : **8161615370**
 Status : **Answered**
 Chosen Option : 4

Q.75 The value of $\left[\frac{4}{7} \text{ of } 2\frac{4}{5} \times 1\frac{2}{3} - \left(3\frac{1}{2} - 2\frac{1}{6}\right)\right] \div \left(3\frac{1}{5} \div 4\frac{1}{2} \text{ of } 5\frac{1}{3}\right)$ is:

Ans

1. $7\frac{1}{2}$

2. $1\frac{1}{3}$

3. 10

4. 15

Question ID : 8161615285

Status : Marked For Review

Chosen Option : 1

Q.76 The value of $\frac{\sec^2\theta(2+\tan^2\theta+\cot^2\theta) \div (\sin^2\theta - \tan^2\theta)}{(\operatorname{cosec}^2\theta + \sec^2\theta)(1 + \cot^2\theta)^2}$ is:

Ans

1. 1

2. -2

3. 2

4. -1

Question ID : 8161615362

Status : Answered

Chosen Option : 4

Q.77 A solid metallic sphere of radius 15 cm is melted and recast into spherical balls of radius 3 cm each. What is the ratio of the surface area of the original sphere and the sum of the surface areas of all the balls?

Ans

1. 1 : 5

2. 5 : 27

3. 1 : 10

4. 3 : 40

Question ID : 8161615353

Status : Answered

Chosen Option : 1

Q.78 The numerator of a fraction is 3 more than the denominator. When 5 is added to the numerator and 2 is subtracted from the denominator, the fraction becomes $\frac{8}{3}$. When the original fraction is divided by $5\frac{1}{2}$, the fraction so obtained is:

- Ans**
- 1. $\frac{1}{2}$
 - 2. $\frac{2}{3}$
 - 3. $\frac{3}{4}$
 - 4. $\frac{1}{4}$

Question ID : 8161615288

Status : Answered

Chosen Option : 4

Q.79 The curved surface area of a right cylinder is 3696 cm^2 . Its height is three times its radius. What is the capacity (in litres) of the cylinder? (Take $\pi = \frac{22}{7}$)

- Ans**
- 1. 25.872
 - 2. 30.87
 - 3. 29.75
 - 4. 19.008

Question ID : 8161615357

Status : Answered

Chosen Option : 1

Q.80 A certain sum is lent at 4% p.a. for 3 years, 8% p.a. for the next 4 years, and 12% p.a. beyond 7 years. If for a period of 11 years, the simple interest obtained is ₹27,600, then the sum is (in ₹):

- Ans**
- 1. 25,000
 - 2. 32,000
 - 3. 27,000
 - 4. 30,000

Question ID : 8161615302

Status : Not Answered

Chosen Option : --

Q.81 Given that $x^8 - 34x^4 + 1 = 0$, $x > 0$. What is the value of $(x^3 + x^{-3})$?

- Ans
- 1. $5\sqrt{8}$
 - 2. $5\sqrt{6}$
 - 3. $6\sqrt{8}$
 - 4. $6\sqrt{6}$

Question ID : 8161615331
 Status : Answered
 Chosen Option : 1

Q.82 A takes 2 hours more than B to cover a distance of 40 km. If A doubles his speed, he takes $1\frac{1}{2}$ hours more than B to cover 80 km. To cover a distance of 90 km, how much time will B take travelling at his same speed?

- Ans
- 1. $1\frac{3}{8}$ hours
 - 2. $1\frac{1}{8}$ hours
 - 3. $1\frac{1}{6}$ hours
 - 4. $1\frac{1}{3}$ hours

Question ID : 8161615319
 Status : Answered
 Chosen Option : 2

Q.83 A train of length 287 m, running at 80 km/h, crosses another train moving in the opposite direction at 37 km/h in 18 seconds. What is the length of the other train?

- Ans
- 1. 300 m
 - 2. 298 m
 - 3. 289 m
 - 4. 285 m

Question ID : 8161615317
 Status : Answered
 Chosen Option : 2

Q.84 In $\triangle ABC$, D and E are the mid points of sides BC and AC, respectively. If AD = 10.8 cm, BE = 14.4 cm and AD and BE intersect at G at a right angle, then the area (in cm^2) of $\triangle ABC$ is:

- Ans
- 1. 103.68
 - 2. 53.76
 - 3. 80.64
 - 4. 56.76

Question ID : 8161615338
 Status : Not Answered
 Chosen Option : --

Q.85 Shashi sells two articles for ₹5,000 each with no loss and no profit in the overall transaction. If one article is sold at

$16\frac{2}{3}\%$ loss, then the other is sold at a profit of:

- Ans**
- 1. 25%
 - 2. 24%
 - 3. $16\frac{2}{3}\%$
 - 4. $18\frac{1}{3}\%$

Question ID : 8161615306

Status : Answered

Chosen Option : 1

Q.86 The sum of the radii of spheres A and B is 14 cm, the radius of A being larger than that of B. The difference between their surface areas is 112π . What is the ratio of the volumes of A and B?

- Ans**
- 1. 125 : 64
 - 2. 64 : 27
 - 3. 27 : 8
 - 4. 8 : 1

Question ID : 8161615352

Status : Answered

Chosen Option : 2

Q.87 An article is marked 35% above its cost. If a profit of 20% is earned by selling the article, then the discount per cent offered on the marked price of the article is:

- Ans**
- 1. 12%
 - 2. $10\frac{1}{9}\%$
 - 3. $11\frac{1}{9}\%$
 - 4. 15%

Question ID : 8161615311

Status : Answered

Chosen Option : 3

Q.88 In ΔPQR , $\angle Q = 84^\circ$, $\angle R = 48^\circ$, $PS \perp QR$ at S and the bisector of $\angle P$ meets QR at T. What is the measure of $\angle SPT$?

- Ans**
- 1. 12°
 - 2. 24°
 - 3. 21°
 - 4. 18°

Question ID : 8161615337

Status : Answered

Chosen Option : 4

Q.89 If $\frac{1}{4-\sqrt{8}} + \frac{3+2\sqrt{2}}{3-2\sqrt{2}} - \frac{3-2\sqrt{2}}{3+2\sqrt{2}} = a + b\sqrt{2}$, then what is the value of $(3a + 4b)$?

- Ans
- 1. $99\frac{1}{2}$
 - 2. 98
 - 3. $98\frac{1}{2}$
 - 4. 97

Question ID : 8161615291
 Status : Answered
 Chosen Option : 3

Q.90 The base of a right prism is a regular hexagon of side 5 cm. If its height is $12\sqrt{3}$ cm, then its volume (in cm^3) is:

- Ans
- 1. 1800
 - 2. 900
 - 3. 1350
 - 4. 675

Question ID : 8161615348
 Status : Answered
 Chosen Option : 3

Q.91 Three men and 4 women can do a piece of work in 7 days, whereas 2 men and 1 woman can do it in 14 days. Seven women will complete the same work in:

- Ans
- 1. 10 days
 - 2. 8 days
 - 3. 9 days
 - 4. 12 days

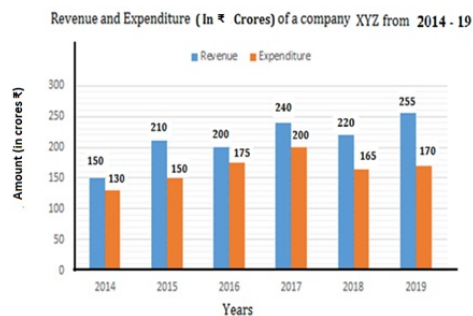
Question ID : 8161615323
 Status : Answered
 Chosen Option : 1

Q.92 The monthly incomes of A and B are in the ratio 3 : 5 and the ratio of their savings is 2 : 3. If the income of B is equal to three times the savings of A, then what is the ratio of the expenditures of A and B?

- Ans
- 1. 5 : 8
 - 2. 8 : 15
 - 3. 3 : 7
 - 4. 7 : 11

Question ID : 8161615301
 Status : Answered
 Chosen Option : 2

Q.93 Study the given graph and answer the question that follows.



The total revenue in 2015 and 2017 is what per cent of the total expenditure of the company in 2016, 2018 and 2019 (correct to one decimal place)?

- Ans
- 1. 86.5
 - 2. 89.1
 - 3. 88.2
 - 4. 86.3

Question ID : 8161615374

Status : Answered

Chosen Option : 3

Q.94 The radii of two right circular cylinders are in the ratio 3 : 2 and the ratio of their volumes is 27 : 16. What is the ratio of their heights?

- Ans
- 1. 8 : 9
 - 2. 3 : 4
 - 3. 4 : 3
 - 4. 9 : 8

SSC

adda247

Question ID : 8161615358

Status : Answered

Chosen Option : 2

Q.95 When x is added to each of 9, 15, 21 and 31, the numbers so obtained are in proportion. What is the mean proportional between the numbers $(3x - 2)$ and $(5x + 4)$?

- Ans
- 1. 42
 - 2. 35
 - 3. 20
 - 4. 30

Question ID : 8161615299

Status : Answered

Chosen Option : 2

Q.96 Given that $\triangle DEF \sim \triangle ABC$. If the area of $\triangle ABC$ is 9 cm^2 and that of $\triangle DEF = 12 \text{ cm}^2$ and $BC = 2.1 \text{ cm}$, then the length of EF is:

- Ans**
1. $\frac{8\sqrt{3}}{5} \text{ cm}$
2. $\frac{7\sqrt{3}}{5} \text{ cm}$
3. $\frac{4\sqrt{7}}{5} \text{ cm}$
4. $\frac{3\sqrt{7}}{5} \text{ cm}$

Question ID : **8161615341**

Status : **Answered**

Chosen Option : **2**

Q.97 The average score in Mathematics of 90 students of section A and B of class IX was 63. The number of students in A were 10 more than those in B. The average score of students in A was 30% more than that of students in B. The average score of students in B is:

- Ans**
1. 56
2. 60
3. 50
4. 54

SSC

Question ID : **8161615326**

Status : **Answered**

Chosen Option : **4**

Q.98 The perimeters of $\triangle ABC$ and $\triangle DEF$ are 43.2 cm and 28.8 cm , respectively, and $\triangle ABC \sim \triangle DEF$. If $DE = 12 \text{ cm}$, then the length of AB is:

- Ans**
1. 18.4 cm
2. 20 cm
3. 18 cm
4. 20.4 cm

Question ID : **8161615342**

Status : **Answered**

Chosen Option : **3**

Q.99 The radius and height of a right circular cone are in the ratio 3 : 4. If its curved surface area (in cm^2) is 240π , then its volume (in cm^3) is:

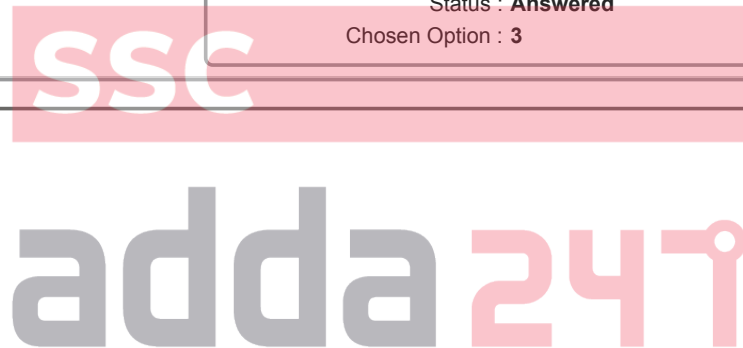
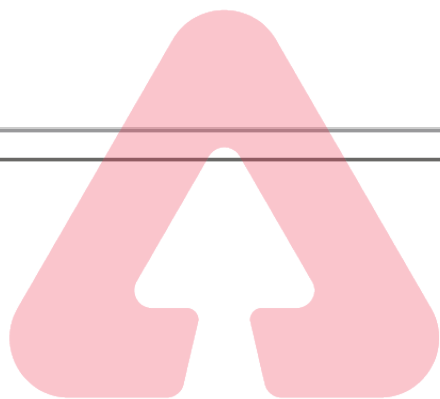
- Ans
- 1. 2304π
 - 2. 384π
 - 3. 1536π
 - 4. 768π

Question ID : **8161615351**
Status : **Answered**
Chosen Option : **4**

Q.100 $\frac{\sin\theta[(1-\tan\theta)\tan\theta+\sec^2\theta]}{(1-\sin\theta)\tan\theta(1+\tan\theta)(\sec\theta+\tan\theta)}$ is equal to:

- Ans
- 1. $\operatorname{cosec}\theta \sec\theta$
 - 2. -1
 - 3. 1
 - 4. $\sin\theta \cos\theta$

Question ID : **8161615360**
Status : **Answered**
Chosen Option : **3**



Combined Graduate Level Examination 2019 Tier II

Roll Number	
Venue Name	iON Digital Zone iDZ Jaulan Kalan
Exam Date	16/11/2020
Exam Time	10:00 AM - 12:00 PM
Subject	CGLE Tier II Paper I Quantitative abilities

Section : Quantitative abilities

Q.1 If $(x + y)^3 + 8(x - y)^3 = (3x + Ay)(3x^2 + Bxy + Cy^2)$, then the value of A+B+C is:

- Ans
- 1. 0
 - 2. 4
 - 3. 2
 - 4. 3

Question ID : 6549781776
Status : Answered
Chosen Option : 1

Q.2 If $\cos(2\theta + 54^\circ) = \sin\theta$, $0^\circ < (2\theta + 54^\circ) < 90^\circ$, then what is the value of $\frac{1}{\tan 5\theta + \operatorname{cosec} \frac{5\theta}{2}}$?

- Ans
- 1. $3\sqrt{2}$
 - 2. $2 - \sqrt{3}$
 - 3. $2\sqrt{3}$
 - 4. $2 + \sqrt{3}$

Question ID : 6549781817
Status : Answered
Chosen Option : 2

Q.3 The circumference of the base of a right circular cone is 44 cm and its height is 24 cm. The curved surface area (in cm^2) of the cone is:
(Take $\pi = \frac{22}{7}$)

- Ans
- 1. 528
 - 2. 572
 - 3. 550
 - 4. 440

Question ID : 6549781799
Status : Answered
Chosen Option : 3

Q.4 The value of $(\tan^2 A + \cot^2 A - 2) - \sec^2 A \operatorname{cosec}^2 A$ is:

- Ans
- 1. -4
 - 2. -1
 - 3. 1
 - 4. 4

Question ID : 6549781810

Status : Answered

Chosen Option : 1

Q.5 The average of twenty-five numbers is 54. The average of the first 13 numbers and that of the last 13 numbers is 52.8 and 62.2, respectively. If the 13th number is excluded, then what is the average of the remaining numbers (correct to one decimal place)?

- Ans
- 1. 50.6
 - 2. 49.8
 - 3. 51.2
 - 4. 50.2

Question ID : 6549781774

Status : Answered

Chosen Option : 4

Q.6 $\frac{\sin^2 \theta}{\cos \theta (1 + \cos \theta)} + \frac{1 + \cos \theta}{\cos \theta} = ?$

- Ans
- 1. $\operatorname{cosec} \theta$
 - 2. $\sec \theta$
 - 3. $2 \cos \theta$
 - 4. $2 \sec \theta$

Question ID : 6549781812

Status : Answered

Chosen Option : 3

Q.7 In $\triangle ABC$, D is a point on side BC such that $\angle ADC = 2\angle BAD$. If $\angle A = 80^\circ$ and $\angle C = 38^\circ$, then what is the measure of $\angle ADB$?

- Ans
- 1. 58°
 - 2. 62°
 - 3. 52°
 - 4. 56°

Question ID : 6549781788

Status : Answered

Chosen Option : 4

Q.8 To do a certain work, the ratio of the efficiencies of A and B is 7 : 5. Working together, they can complete the same work in $17\frac{1}{2}$ days. A alone will complete 60% of the same work in:

- Ans**
- 1. 18 days
 - 2. 15 days
 - 3. 16 days
 - 4. 21 days

Question ID : 6549781773
Status : Answered
Chosen Option : 1

Q.9 In what ratio should sugar costing ₹40 per kg be mixed with sugar costing ₹48 per kg, so as to earn a profit of 20% by selling the mixture at ₹54 per kg?

- Ans**
- 1. 3 : 5
 - 2. 4 : 7
 - 3. 5 : 8
 - 4. 2 : 3

Question ID : 6549781764
Status : Answered
Chosen Option : 1

Q.10 From the top of a hill 240 m high, the angles of depression of the top and bottom of a pole are 30° and 60° , respectively. The difference (in m) between the height of the pole and its distance from the hill is:

- Ans**
- 1. $120(2-\sqrt{3})$
 - 2. $120(\sqrt{3}-1)$
 - 3. $80(\sqrt{3}-1)$
 - 4. $80(2-\sqrt{3})$

Question ID : 6549781819
Status : Answered
Chosen Option : 4

Q.11 If $\sqrt{11 - 3\sqrt{8}} = a + b\sqrt{2}$, then what is the value of $(2a + 3b)$?

- Ans**
- 1. 7
 - 2. 9
 - 3. 3
 - 4. 5

Question ID : 6549781740
Status : Answered
Chosen Option : 3

Q.12 The number of students in section A and section B of a class are 40 and 52, respectively. The average score in mathematics of all the students is 75. If the average score of the students in A is 20% more than that of students in B, then what is the average score of students in B?

- Ans**
- 1. 71
 - 2. 65
 - 3. 69
 - 4. 63

Question ID : 6549781775
Status : Answered
Chosen Option : 3

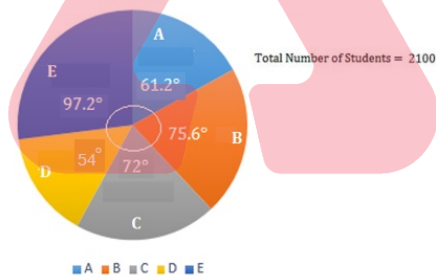
Q.13 A dealer marks his goods at 40% above the cost price. He sells 60% of the goods at the marked price giving 10% discount and the rest by giving 50% discount on the marked price. What is his overall profit/loss per cent?

- Ans**
- 1. Loss 2.8%
 - 2. Profit 2.8%
 - 3. Profit 3.6%
 - 4. Loss 3.6%

Question ID : 6549781759
Status : Answered
Chosen Option : 3

Q.14 Study the pie-chart and answer the options:-

Break up (degree wise) of students in terms of specialization in different areas (A,B,C,D & E) in an MBA program.



The total number of students specialising in A and B exceeds the total number of students specialising in C and D by x, which lies between:

- Ans**
- 1. 60 and 65
 - 2. 55 and 60
 - 3. 50 and 55
 - 4. 65 and 70

Question ID : 6549781824
Status : Answered
Chosen Option : 1

Q.15 The circumference of the base of a cylindrical vessel is 158.4 cm and its height is 1 m. How many litres of water can it hold (correct to one decimal place)?

(Take $\pi = \frac{22}{7}$)

- Ans**
- 1. 186.4
 - 2. 200.8
 - 3. 198.2
 - 4. 199.6

Question ID : 6549781807

Status : Answered

Chosen Option : 3

Q.16 A hemispherical tank full of water is emptied by a pipe at the rate of 7.7 litres per second. How much time (in hours)

will it take to empty $\frac{2}{3}$ part of the tank, if the internal radius of the tank is 10.5 m?

- Ans**
- 1. $\frac{185}{3}$
 - 2. $\frac{185}{6}$
 - 3. $\frac{175}{3}$
 - 4. $\frac{175}{2}$

SSC

Question ID : 6549781803

Status : Answered

Chosen Option : 3

Q.17 A cylindrical roller made of iron is 1.2 m long. Its internal radius is 24 cm and thickness of the iron sheet used in making the roller is 15 cm. What is the mass (in kg) of the roller, if 1 cm^3 of iron has 8 g mass?

- Ans**
- 1. 846.72π
 - 2. 845.75π
 - 3. 892.8π
 - 4. 907.2π

Question ID : 6549781804

Status : Answered

Chosen Option : 3

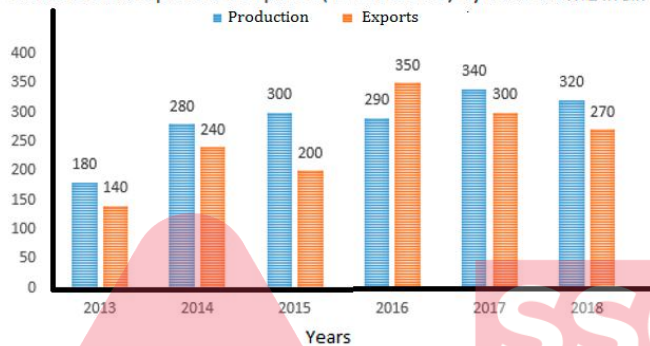
Q.18 The rate of interest for the first 2 years is 6% p.a., for the next 3 years is 10% p.a., and for the period beyond 5 years is 12% p.a. If a person gets ₹12,771 as simple interest after 7 years, then how much money did he invest?

- Ans**
- 1. ₹20,000
 - 2. ₹19,350
 - 3. ₹19,450
 - 4. ₹19,300

Question ID : **6549781751**
Status : **Answered**
Chosen Option : **3**

Q.19 Study the given graph and answer the question that follows.

Productions and Exports of Computers (In Thousands) by COMPANY XYZ in six Years

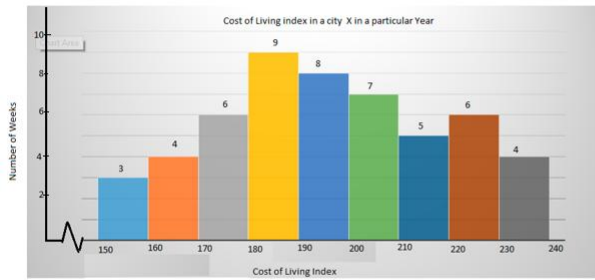


By what per cent were the total exports of computers, by the company, in 2013, 2014 and 2018 less than the total production of computers in 2015 to 2017 (correct to one decimal place)?

- Ans**
- 1. 28.8
 - 2. 32.6
 - 3. 43.1
 - 4. 30.1

Question ID : **6549781823**
Status : **Answered**
Chosen Option : **4**

Q.20 Study the given graph and answer the question that follows.



The number of weeks, in which the cost of living index was 160 or more but less than 190, is approximately what per cent more than the number of weeks in which the cost of living index was 200 or more but less than 220 (correct to one decimal place)?

- Ans
- ✓ 1. 58.3
 - ✗ 2. 36.8
 - ✗ 3. 60.6
 - ✗ 4. 44.4

Question ID : 6549781820
Status : Answered
Chosen Option : 1

Q.21 The value of $\frac{7+3\sqrt{5}}{3+\sqrt{5}} - \frac{7-3\sqrt{5}}{3-\sqrt{5}}$ lies between:

- Ans
- ✗ 1. 3 and 3.5
 - ✓ 2. 2 and 2.5
 - ✗ 3. 1.5 and 2
 - ✗ 4. 2.5 and 3

SSC

adda247

Question ID : 6549781739
Status : Answered
Chosen Option : 2

Q.22 A and B enter into a partnership with capital in the ratio 5 : 6. After 4 months, A withdraws $\frac{1}{5}$ of his capital, while B increases his capital by $33\frac{1}{3}\%$. What is the share (in ₹ lakhs) of B in the annual profit of ₹6.3 lakhs?

- Ans
- ✗ 1. 2.34
 - ✓ 2. 3.96
 - ✗ 3. 2.61
 - ✗ 4. 3.69

Question ID : 6549781763
Status : Answered
Chosen Option : 2

Q.23 In $\triangle ABC$, right angled at B, if $\tan A = \frac{1}{2}$, then the value of $\frac{\sin A (\cos C + \cos A)}{\cos C (\sin C - \sin A)}$ is:

- Ans
- 1. 2
 - 2. 1
 - 3. 3
 - 4. $2\sqrt{5}$

Question ID : 6549781815
Status : Answered
Chosen Option : 3

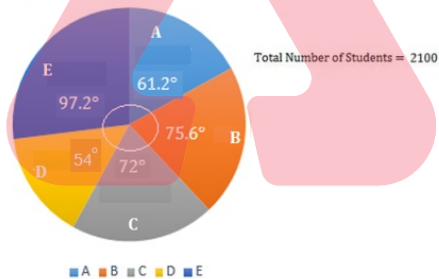
Q.24 When positive numbers a, b and c are divided by 13, the remainders are 9, 7 and 10, respectively. What will be the remainder when $(a + 2b + 5c)$ is divided by 13?

- Ans
- 1. 8
 - 2. 9
 - 3. 5
 - 4. 10

Question ID : 6549781727
Status : Answered
Chosen Option : 1

Q.25 Study the pie-chart and answer the options:-

Break up (degree wise) of students in terms of specialization in different areas (A,B,C,D & E) in an MBA program.



If the ratio of male and female students specialising in B is 4 : 3 and that of male and female students specialising in D is 8 : 7, then the number of female students in D is what per cent less than the number of male students in B (correct to one decimal place)?

- Ans
- 1. 41.7
 - 2. 40.2
 - 3. 55.8
 - 4. 71.4

Question ID : 6549781826
Status : Answered
Chosen Option : 3

Q.26 A train travelling at 36 km/h crosses a pole in 25 seconds. How much time (in seconds) will it take to cross a bridge 350 m long?

- Ans**
- 1. 72
 - 2. 48
 - 3. 60
 - 4. 56

Question ID : 6549781767
Status : Answered
Chosen Option : 3

Q.27 $\frac{25\% \text{ of } (50\% \text{ of } 30\% \text{ of } 150)}{40\% \text{ of } 2250}$ is equal to:

- Ans**
- 1. 0.625%
 - 2. 0.225%
 - 3. 0.825%
 - 4. 0.25%

Question ID : 6549781743
Status : Answered
Chosen Option : 1

Q.28 What price should Neeraj mark on a shirt that costs ₹840, so as to earn a profit of 18% after allowing a discount of 16% on the marked price?

- Ans**
- 1. ₹1,200
 - 2. ₹1,180
 - 3. ₹1,240
 - 4. ₹1,160

Question ID : 6549781761
Status : Answered
Chosen Option : 2

Q.29 If $x - \frac{1}{x} = 5, x \neq 0$, then what is the value of $\frac{x^6 + 3x^3 - 1}{x^6 - 8x^3 - 1}$?

Ans

1. $\frac{3}{8}$

2. $\frac{13}{12}$

3. $\frac{4}{9}$

4. $\frac{11}{13}$

Question ID : 6549781780

Status : Answered

Chosen Option : 2

Q.30 Alloy A contains metals x and y only in the ratio 5 : 2 and alloy B contains these metals in the ratio 3 : 4. Alloy C is prepared by mixing A and B in the ratio 4 : 5. The percentage of x in alloy C is:

Ans

1. 45

2. $55\frac{5}{9}$

3. $44\frac{4}{9}$

4. 56

SSC

adda247

Question ID : 6549781765

Status : Answered

Chosen Option : 2

Q.31 The value of $\frac{5\cos^2 60^\circ + 4\sec^2 30^\circ - \tan^2 45^\circ}{\tan^2 60^\circ - \sin^2 30^\circ - \cos^2 45^\circ}$ is:

Ans

1. $\frac{67}{27}$

2. $\frac{22}{9}$

3. $\frac{67}{24}$

4. $\frac{19}{9}$

Question ID : 6549781816

Status : Answered

Chosen Option : 1

Q.32 If $x = \sec 57^\circ$, then

$\cot^2 33^\circ + \sin^2 57^\circ + \sin^2 33^\circ + \operatorname{cosec}^2 57^\circ \cos^2 33^\circ + \sec^2 33^\circ \sin^2 57^\circ$ is equal to:

- Ans
- 1. $2x^2 + 1$
 - 2. $\frac{1}{x^2 + 1}$
 - 3. $x^2 + 1$
 - 4. $x^2 + 2$

Question ID : 6549781818

Status : Answered

Chosen Option : 4

Q.33 Reshma buys two articles A and B for ₹1,734. She sells A at a loss of 16% and sells B at a gain of 20%. The selling price of both the articles is the same. If A is sold for ₹1,147.50, then the gain per cent on A is:

- Ans
- 1. 12.5
 - 2. 12
 - 3. 10.5
 - 4. 10

Question ID : 6549781758

Status : Answered

Chosen Option : 1

Q.34 In ΔPQR , PS is the internal bisector of $\angle P$ meeting QR at S, PQ = 16 cm, PR = 22.4 cm and QR = 9.6 cm. The length of SR (in cm) is:

- Ans
- 1. 4
 - 2. 4.4
 - 3. 6
 - 4. 5.6

Question ID : 6549781787

Status : Answered

Chosen Option : 4

Q.35 A shopkeeper bought 20 kg of rice at ₹55 per kg, 25 kg of rice at ₹50 per kg, and 35 kg of rice at ₹60 per kg. He spent a sum of ₹150 on transportation. He mixed all the three types of rice and sold all the stock at ₹62.56 per kg. His profit per cent in the entire transaction is:

- Ans
- 1. 8.8
 - 2. 12.5
 - 3. 10.5
 - 4. 9.2

Question ID : 6549781757

Status : Answered

Chosen Option : 2

Q.36 If $\operatorname{cosec} \theta = b/a$, then $\frac{\sqrt{3}\cot\theta+1}{\tan\theta+\sqrt{3}}$ is equal to:

Ans

1. $\frac{\sqrt{b^2 - a^2}}{b}$

2. $\frac{\sqrt{b^2 - a^2}}{a}$

3. $\frac{\sqrt{a^2 + b^2}}{a}$

4. $\frac{\sqrt{a^2 + b^2}}{b}$

Question ID : 6549781814

Status : Answered

Chosen Option : 2

Q.37 When x is subtracted from each of 19, 28, 55 and 91, the numbers so obtained in this order, are in proportion. What is the mean proportional between $(x + 9)$ and x^2 ?

Ans

1. 27

2. 32

3. 28

4. 24

SSC

Question ID : 6549781748

Status : Answered

Chosen Option : 3

Q.38 A solid metallic cuboid of dimensions $18 \text{ cm} \times 36 \text{ cm} \times 72 \text{ cm}$ is melted and recast into 8 cubes of the same volume. What is the ratio of the total surface area of the cuboid to the sum of the lateral surface areas of all 8 cubes?

Ans

1. 4 : 7

2. 7 : 8

3. 7 : 12

4. 2 : 3

Question ID : 6549781808

Status : Answered

Chosen Option : 2

Q.39 If the radius of a sphere is increased by 2.5 decimetre (dm), then its surface area increases by 110 dm^2 . What is the volume (in dm^3) of the sphere?

(Take $\pi = \frac{22}{7}$)

Ans

1. $\frac{13}{21}$

2. $\frac{3}{7}$

3. $\frac{4}{7}$

4. $\frac{11}{21}$

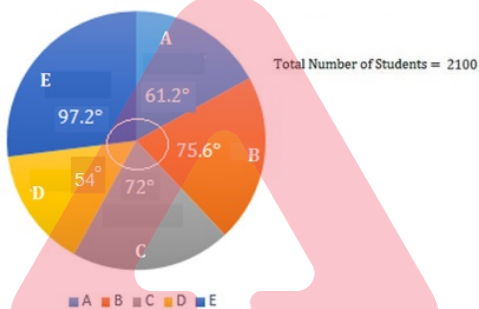
Question ID : 6549781801

Status : Answered

Chosen Option : 4

Q.40 Study the pie-chart and answer the options:-

Break up (degree wise) of students in terms of specialization in different areas (A,B,C,D & E) in an MBA program.



The number of students specialising in E is what per cent more than that of students specialising in C?

Ans

1. 25.9

2. 30.4

3. 32

4. 35

Question ID : 6549781825

Status : Answered

Chosen Option : 4

Q.41 A sum of ₹10,500 amounts to ₹13,650 in 2 years at a certain rate per cent per annum simple interest. The same sum will amount to what in 1 year at the same rate, if the interest is compounded half yearly (nearest to ₹1)?

- Ans
- 1. ₹12,124
 - 2. ₹12,134
 - 3. ₹12,143
 - 4. ₹12,314

Question ID : 6549781752
Status : Answered
Chosen Option : 2

Q.42 A boat can go 5 km upstream and $7\frac{1}{2}$ km downstream in 45 minutes. It can also go 5 km downstream and 2.5 km upstream in 25 minutes. How much time (in minutes) will it take to go 6 km upstream?

- Ans
- 1. 30
 - 2. 36
 - 3. 24
 - 4. 32

Question ID : 6549781769
Status : Answered
Chosen Option : 2

Q.43 If the five-digit number $235xy$ is divisible by 3, 7 and 11, then what is the value of $(3x - 4y)$?

- Ans
- 1. 10
 - 2. 8
 - 3. 9
 - 4. 5

Question ID : 6549781729
Status : Answered
Chosen Option : 3

Q.44 Two men and 7 women can complete a work in 28 days, whereas 6 men and 16 women can do the same work in 11 days. In how many days will 5 men and 4 women, working together, complete the same work?

- Ans
- 1. 20
 - 2. 18
 - 3. 14
 - 4. 22

Question ID : 6549781772
Status : Answered
Chosen Option : 4

Q.45 The denominator of a fraction is 4 more than twice the numerator. When the numerator is increased by 3 and the denominator is decreased by 3, the fraction becomes $\frac{2}{3}$. What is the difference between the denominator and numerator of the original fraction?

- Ans**
- 1. 13
 - 2. 10
 - 3. 12
 - 4. 11

Question ID : 6549781737
Status : Answered
Chosen Option : 4

Q.46 The monthly salaries of A and B are the same. A, B and C donate 10%, 8% and 9% respectively, of their monthly salaries to a charitable trust. The difference between the donations of A and B is ₹400. The total donation by A and B is ₹900 more than that of C. What is the monthly salary of C?

- Ans**
- 1. ₹25,000
 - 2. ₹30,000
 - 3. ₹27,000
 - 4. ₹36,000

Question ID : 6549781746
Status : Answered
Chosen Option : 2

Q.47 Let ab , $a \neq b$, is a 2-digit prime number such that ba is also a prime number. The sum of all such numbers is:

- Ans**
- 1. 407
 - 2. 418
 - 3. 396
 - 4. 374

Question ID : 6549781730
Status : Answered
Chosen Option : 1

Q.48 An article is marked 25% above its cost price. If $x\%$ discount is allowed on the marked price and still there is a profit of 5.5%, then what is the value of x ?

- Ans**
- 1. 16.4
 - 2. 15.4
 - 3. 13.6
 - 4. 15.6

Question ID : 6549781760
Status : Answered
Chosen Option : 3

Q.49 The value of $\frac{27 \times (0.25)^3 + 125(0.05)^3}{(0.75)^2 - 0.25 \times 0.5}$ is :

- Ans
- 1. 1
 - 2. 0.75
 - 3. 0.25
 - 4. 0.5

Question ID : 6549781733
Status : Answered
Chosen Option : 1

Q.50 The value of $\frac{\sin\theta + \cos\theta - 1}{\sin\theta - \cos\theta + 1} \times \sqrt{\frac{1 + \sin\theta}{1 - \sin\theta}}$ is:

- Ans
- 1. -2
 - 2. 2
 - 3. -1
 - 4. 1

Question ID : 6549781813
Status : Answered
Chosen Option : 4

Q.51 The base of a solid right prism of height 10 cm is a square and its volume is 160 cm^3 . What is its total surface area of the prism (in cm^2)?

- Ans
- 1. 200
 - 2. 176
 - 3. 192
 - 4. 180

Question ID : 6549781797
Status : Answered
Chosen Option : 3

Q.52 A can do $\frac{1}{3}$ of a work in 30 days. B can do $\frac{2}{5}$ of the same work in 24 days. They worked together for 20 days. C completed the remaining work in 8 days. Working together A, B and C will complete the same work in:

- Ans
- 1. 15 days
 - 2. 10 days
 - 3. 18 days
 - 4. 12 days

Question ID : 6549781770
Status : Answered
Chosen Option : 4

Q.53

The value of $4 \div 12$ of $[3 \div 4$ of $\{(4 - 2) \times 6 \div 2\}] - 2 \times 6 \div 8 + 3$ is:

Ans

1. $4\frac{1}{6}$

2. $3\frac{1}{3}$

3. $2\frac{1}{3}$

4. $7\frac{1}{6}$

Question ID : 6549781728

Status : Answered

Chosen Option : 1

Q.54 What is the area (in sq. units) of the triangle formed by the graphs of the equations $2x + 5y - 12 = 0$, $x + y = 3$ and $y = 0$?

Ans

1. 3

2. 2

3. 5

4. 6

SSC

Question ID : 6549781782

Status : Answered

Chosen Option : 1

Q.55 A metallic solid spherical ball of radius 3 cm is melted and recast into three spherical balls. The radii of two of these balls are 2 cm and 1.5 cm. What is the surface area (in cm^2) of the third ball?

Ans

1. 50π

2. $\frac{25}{4}\pi$

3. 25π

4. $\frac{25}{2}\pi$

adda247

Question ID : 6549781802

Status : Answered

Chosen Option : 3

Q.56 In $\triangle ABC$, D and E are points on the sides AB and AC, respectively, such that $DE \parallel BC$. If $AD = 5$ cm, $DB = 9$ cm, $AE = 4$ cm and $BC = 15.4$ cm, then the sum of the lengths of DE and EC (in cm) is:

- Ans
- 1. 11.6
 - 2. 10.8
 - 3. 13.4
 - 4. 12.7

Question ID : 6549781789
Status : Answered
Chosen Option : 4

Q.57 The base of a right pyramid is an equilateral triangle with side 8 cm, and its height is $30\sqrt{3}$ cm. The volume (in cm^3) of the pyramid is:

- Ans
- 1. $240\sqrt{3}$
 - 2. $360\sqrt{3}$
 - 3. 480
 - 4. 360

Question ID : 6549781798
Status : Answered
Chosen Option : 3

Q.58 If $a : b : c = \frac{1}{4} : \frac{1}{3} : \frac{1}{2}$, then $\frac{a}{b} : \frac{b}{c} : \frac{c}{a} = ?$

- Ans
- 1. 12 : 9 : 8
 - 2. 9 : 8 : 24
 - 3. 8 : 9 : 24
 - 4. 9 : 12 : 8

Question ID : 6549781747
Status : Answered
Chosen Option : 2

Q.59 A loan is to be returned in two equal yearly instalments. If the rate of interest is 10% p.a., compounded annually, and each instalment is ₹5,808, then the total interest charged in this scheme is:

- Ans
- 1. ₹1,563
 - 2. ₹1,536
 - 3. ₹1,632
 - 4. ₹1,602

Question ID : 6549781754
Status : Answered
Chosen Option : 2

Q.60 The value of $3\frac{1}{5} \div 4\frac{1}{2}$ of $5\frac{1}{3} + \frac{1}{8} \div \frac{1}{2}$ of $\frac{1}{4} - \frac{1}{4}(\frac{1}{2} \div \frac{1}{8} \times \frac{1}{4})$ is:

- Ans
- 1. $\frac{13}{15}$
 - 2. $\frac{7}{8}$
 - 3. $\frac{3}{4}$
 - 4. $\frac{53}{60}$

Question ID : 6549781734

Status : Answered

Chosen Option : 2

Q.61 A sold an item to B at 20% gain, B sold it to C at 8% gain. C sold it to D at 25% loss. If the difference between the profits of A and B is ₹260, then D bought it for:

- Ans
- 1. ₹2,268
 - 2. ₹2,430
 - 3. ₹2,200
 - 4. ₹2,480

SSC

Question ID : 6549781756

Status : Answered

Chosen Option : 4

Q.62 Renu saves 20% of her income. If her expenditure increases by 20% and income increases by 29%, then her savings increase by:

- Ans
- 1. 55%
 - 2. 65%
 - 3. 54%
 - 4. 60%

Question ID : 6549781745

Status : Answered

Chosen Option : 2

Q.63 The compound interest on a sum of ₹20,000 at 15% p.a. for $2\frac{2}{3}$ years, interest compounded yearly, is:

- Ans**
- 1. ₹9,098
 - 2. ₹8,896
 - 3. ₹9,000
 - 4. ₹9,095

Question ID : 6549781753
Status : Answered
Chosen Option : 2

Q.64 From a solid cylindrical wooden block of height 18 cm and radius 7.5 cm, a conical cavity of the same height and same radius is taken out. What is total surface area (in cm^2) of the remaining solid?

- Ans**
- 1. 270π
 - 2. 416.25π
 - 3. 326.25π
 - 4. 472.5π

Question ID : 6549781805
Status : Answered
Chosen Option : 4

Q.65 The ratio of the radii of two cones is 5 : 6 and their volumes are in the ratio 8 : 9. The ratio of their heights is:

- Ans**
- 1. 32 : 25
 - 2. 25 : 32
 - 3. 27 : 20
 - 4. 20 : 27

Question ID : 6549781800
Status : Answered
Chosen Option : 1

Q.66 Let x be the least number which when subtracted from 10424 gives a perfect square number. What is the least number by which x should be multiplied to get a perfect square?

- Ans**
- 1. 3
 - 2. 2
 - 3. 6
 - 4. 5

Question ID : 6549781738
Status : Answered
Chosen Option : 4

Q.67 A certain sum is divided between A, B, C and D such that the ratio of the shares of A and B is 1 : 3, that of B and C is 2 : 5, and that of C and D is 2 : 3. If the difference between the shares of A and C is ₹3,510, then the share of D is:

- Ans
- 1. ₹4,320
 - 2. ₹3,240
 - 3. ₹6,075
 - 4. ₹4,050

Question ID : 6549781749
Status : Answered
Chosen Option : 3

Q.68 If $\frac{1}{x + \frac{1}{y + \frac{1}{z + \frac{1}{4}}}} = \frac{29}{79}$, where x, y and z are natural numbers, then the value of $(2x + 3y - z)$ is:

- Ans
- 1. 0
 - 2. 4
 - 3. 1
 - 4. 2

Question ID : 6549781736
Status : Answered
Chosen Option : 2

Q.69 In a circle, O is the centre of the circle. Chords AB and CD intersect at P. If $\angle AOD = 32^\circ$ and $\angle COB = 26^\circ$, then the measure of $\angle APD$ lies between:

- Ans
- 1. 18° and 22°
 - 2. 26° and 30°
 - 3. 30° and 34°
 - 4. 22° and 26°

Question ID : 6549781794
Status : Answered
Chosen Option : 2

Q.70 If a regular polygon has 16 sides, then what is the measure (in degrees) of its each interior angle?

- Ans
- 1. 154
 - 2. $157\frac{1}{2}$
 - 3. 155
 - 4. $159\frac{1}{2}$

Question ID : 6549781796
Status : Answered
Chosen Option : 2

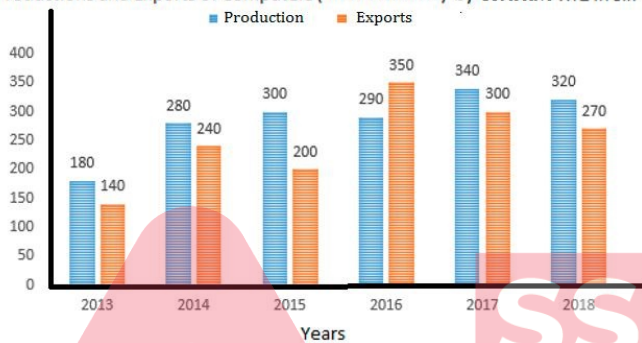
Q.71 $\frac{\sec A (\sec A + \tan A)(1 - \sin A)}{(\operatorname{cosec}^2 A - 1)\sin^2 A}$ is equal to:

- Ans
- 1. $\cot A$
 - 2. $\cos A$
 - 3. $\sec^2 A$
 - 4. $\cos^2 A$

Question ID : 6549781809
 Status : Answered
 Chosen Option : 3

Q.72 Study the given graph and answer the question that follows.

Productions and Exports of Computers (In Thousands) by COMPANY XYZ in six Years



The total production of computers in 2013, 2015 and 2018 is $x\%$ of the total exports of computers by the company during the six years. The value of x is:

- Ans
- 1. $46\frac{1}{3}$
 - 2. $52\frac{1}{3}$
 - 3. $53\frac{1}{3}$
 - 4. $49\frac{2}{3}$

Question ID : 6549781822
 Status : Answered
 Chosen Option : 3

Q.73 Let D and E be two points on the side BC of ΔABC such that $AD = AE$ and $\angle BAD = \angle EAC$. If $AB = (3x + 1)$ cm, $BD = 9$ cm, $AC = 34$ cm and $EC = (y + 1)$ cm, then the value of $(x + y)$ is:

- Ans
- 1. 19
 - 2. 16
 - 3. 17
 - 4. 20

Question ID : 6549781791
Status : Answered
Chosen Option : 3

Q.74 The value of $0.\overline{57} - 0.\overline{432} + 0.\overline{35}$ is:

- Ans
- 1. $0.\overline{498}$
 - 2. $0.\overline{494}$
 - 3. $0.\overline{498}$
 - 4. $0.\overline{494}$

Question ID : 6549781732
Status : Answered
Chosen Option : 1

Q.75 In ΔPQR , $\angle P = 90^\circ$. S and T are the mid points of sides PR and PQ, respectively. What is the value of $RQ^2 / (QS^2 + RT^2)$?

- Ans
- 1. $\frac{3}{4}$
 - 2. $\frac{4}{5}$
 - 3. $\frac{1}{2}$
 - 4. $\frac{2}{3}$

Question ID : 6549781783
Status : Answered
Chosen Option : 2

Q.76 In a circle with centre O, AB is the diameter. P and Q are two points on the circle on the same side of the diameter AB. AQ and BP intersect at C. If $\angle POQ = 54^\circ$, then the measure of $\angle PCA$ is:

- Ans
- 1. 63°
 - 2. 56°
 - 3. 54°
 - 4. 72°

Question ID : 6549781793
Status : Answered
Chosen Option : 1

Q.77 A, B and C invested capital in the ratio 5 : 7 : 4, the timing of their investments being in the ratio $x : y : z$. If their profits are distributed in the ratio 45 : 42 : 28, then $x : y : z = ?$

- Ans
- 1. 9 : 6 : 7
 - 2. 7 : 9 : 4
 - 3. 9 : 4 : 7
 - 4. 6 : 7 : 9

Question ID : 6549781762
Status : Answered
Chosen Option : 1

Q.78 In $\triangle ABC$, D and E are points on the sides AB and AC, respectively, such that $DE \parallel BC$ and $DE : BC = 6 : 7$.
(Area of $\triangle ADE$) : (Area of trapezium BCED) = ?

- Ans
- 1. 49 : 13
 - 2. 13 : 36
 - 3. 13 : 49
 - 4. 36 : 13

Question ID : 6549781790
Status : Answered
Chosen Option : 4

Q.79 The ratio of the monthly incomes of X and Y is 5 : 4 and that of their monthly expenditures is 9 : 7. If the income of Y is equal to the expenditure of X, then what is the ratio of the savings of X and Y?

- Ans
- 1. 9 : 8
 - 2. 6 : 7
 - 3. 8 : 9
 - 4. 7 : 6

Question ID : 6549781750
Status : Answered
Chosen Option : 1

Q.80 Let x be the greatest number which when divides 955, 1027, 1075, the remainder in each case is the same. Which of the following is NOT a factor of x ?

- Ans
- 1. 4
 - 2. 16
 - 3. 8
 - 4. 6

Question ID : 6549781731
Status : Answered
Chosen Option : 3

Q.81 If $2x^2 - 7x + 5 = 0$, then what is the value of $x^2 + \frac{25}{4x^2}$?

- Ans
- 1. $5\frac{1}{2}$
 - 2. $7\frac{1}{4}$
 - 3. $9\frac{1}{2}$
 - 4. $9\frac{3}{4}$

SSC

Question ID : 6549781778
Status : Answered
Chosen Option : 2

Q.82 Raju ate $\frac{3}{8}$ part of a pizza and Adam ate $\frac{3}{10}$ part of the remaining pizza. Then Renu ate $\frac{4}{7}$ part of the pizza that was left. What fraction of the pizza is still left?

- Ans
- 1. $\frac{5}{12}$
 - 2. $\frac{1}{4}$
 - 3. $\frac{1}{8}$
 - 4. $\frac{3}{16}$

adda247

Question ID : 6549781735
Status : Answered
Chosen Option : 4

Q.83 A secant PAB is drawn from an external point P to the circle with centre O, intersecting it at A and B. If $OP = 17$ cm, $PA = 12$ cm and $PB = 22.5$ cm, then the radius of the circle is:

- Ans
- 1. $2\sqrt{3}$ cm
 - 2. $\sqrt{19}$ cm
 - 3. $\sqrt{17}$ cm
 - 4. $3\sqrt{2}$ cm

Question ID : 6549781792
Status : Answered
Chosen Option : 2

Q.84 Pipes A and B can fill a tank in 12 minutes and 15 minutes, respectively. The tank when full can be emptied by pipe C in x minutes. When all the three pipes are opened simultaneously, the tank is full in 10 minutes. The value of x is:

- Ans
- 1. 18
 - 2. 15
 - 3. 20
 - 4. 24

Question ID : 6549781771
Status : Answered
Chosen Option : 3

Q.85 In a quadrilateral ABCD, E is a point in the interior of the quadrilateral such that DE and CE are the bisectors of $\angle D$ and $\angle C$, respectively. If $\angle B = 82^\circ$ and $\angle DEC = 80^\circ$, then $\angle A = ?$

- Ans
- 1. 75°
 - 2. 81°
 - 3. 84°
 - 4. 78°

Question ID : 6549781795
Status : Answered
Chosen Option : 4

Q.86 A drink of chocolate and milk contains 8% pure chocolate by volume. If 10 litres of pure milk are added to 50 litres of this drink, the percentage of chocolate in the new drink is:

- Ans
- 1. $6\frac{2}{3}$
 - 2. $5\frac{2}{3}$
 - 3. $5\frac{1}{3}$
 - 4. $6\frac{1}{3}$

Question ID : 6549781744
Status : Answered
Chosen Option : 1

Q.87 In $\triangle ABC$, M and N are the points on side BC such that $AM \perp BC$, AN is the bisector of $\angle A$, and M lies between B and N. If $\angle B = 68^\circ$, and $\angle C = 26^\circ$, then the measure of $\angle MAN$ is:

- Ans
- 1. 21°
 - 2. 28°
 - 3. 24°
 - 4. 22°

Question ID : 6549781785
Status : Answered
Chosen Option : 1

Q.88 A and B start moving from places X and Y and Y to X, respectively, at the same time on the same day. After crossing each other, A and B take $5\frac{4}{9}$ hours and 9 hours, respectively, to reach their respective destinations. If the speed of A is 33 km/h, then the speed (in km/h) of B is:

- Ans
- 1. 22
 - 2. 2
 - 3. $25\frac{2}{3}$
 - 4. $24\frac{1}{3}$

Question ID : 6549781768
Status : Answered
Chosen Option : 3

Q.89 In $\triangle ABC$, D and E are the midpoints of sides BC and AC, respectively. AD and BE intersect at G at right angle. If AD = 18 cm and BE = 12 cm, then the length of DC (in cm) is:

- Ans
- 1. 10
 - 2. 6
 - 3. 9
 - 4. 8

Question ID : 6549781786
Status : Answered
Chosen Option : 3

Q.90 If A is 40% less than B and C is 40% of the sum of A and B, then by what percentage is B greater than C?

- Ans
- 1. 60
 - 2. $56\frac{1}{4}$
 - 3. $40\frac{1}{8}$
 - 4. 36

Question ID : 6549781742
Status : Answered
Chosen Option : 4

Q.91 When 5 children from class A join class B, the number of children in both classes is the same. If 25 children from B, join A, then the number of children in A becomes double the number of children in B. The ratio of the number of children in A to those in B is:

- Ans**
- 1. 19 : 18
 - 2. 9 : 8
 - 3. 18 : 17
 - 4. 19 : 17

Question ID : 6549781741
Status : Answered
Chosen Option : 4

Q.92 A T.V. is sold at 8% gain. Had it been sold for ₹714 more, the gain would have been 15%. To gain 18%, the selling price of the T.V. should be:

- Ans**
- 1. ₹12,036
 - 2. ₹12,138
 - 3. ₹11,934
 - 4. ₹12,240

Question ID : 6549781755
Status : Answered
Chosen Option : 1

Q.93 If $a + b + c = 7$ and $a^3 + b^3 + c^3 - 3abc = 175$, then what is the value of $(ab + bc + ca)$?

- Ans**
- 1. 8
 - 2. 9
 - 3. 7
 - 4. 6

Question ID : 6549781779
Status : Answered
Chosen Option : 1

Q.94 If $x^2 + 4y^2 = 17$ and $xy = 2$, where $x > 0$, $y > 0$, then what is the value of $x^3 + 8y^3$?

- Ans**
- 1. 95
 - 2. 85
 - 3. 65
 - 4. 76

Question ID : 6549781777
Status : Answered
Chosen Option : 3

Q.95 Amita travels from her house at $3\frac{1}{2}$ km/h and reaches her school 6 minutes late. The next day she travels at $4\frac{1}{2}$ km/h and reaches her school 10 minutes early. What is the distance between her house and the school?

- Ans**
- 1. 5.6 km
 - 2. 4.8 km
 - 3. 5.4 km
 - 4. 4.2 km

Question ID : 6549781766

Status : Answered

Chosen Option : 4

Q.96 In $\triangle ABC$, O is the incentre and $\angle BOC = 135^\circ$. The measure of $\angle BAC$ is:

- Ans**
- 1. 90°
 - 2. 55°
 - 3. 80°
 - 4. 45°

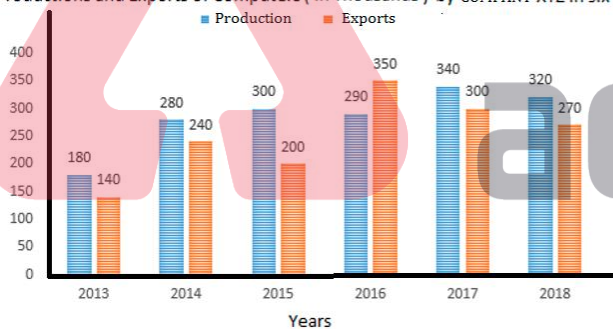
Question ID : 6549781784

Status : Answered

Chosen Option : 1

Q.97 Study the given graph and answer the question that follows.

Productions and Exports of Computers (In Thousands) by COMPANY XYZ in six Years



In which year was the production of computers by the company 16% more than the average exports of computers in the six years (2013 to 2018)?

- Ans**
- 1. 2015
 - 2. 2018
 - 3. 2014
 - 4. 2016

Question ID : 6549781821

Status : Answered

Chosen Option : 4

Q.98 The graphs of the linear equations $3x - 2y = 8$ and $4x + 3y = 5$ intersect at the point $P(\alpha, \beta)$.

What is the value of $(2^\alpha - \beta)$?

- Ans
- 1. 3
 - 2. 4
 - 3. 6
 - 4. 5

Question ID : 6549781781
Status : Answered
Chosen Option : 4

Q.99 $\frac{(1+\tan\theta+\sec\theta)(1+\cot\theta-\operatorname{cosec}\theta)}{(\sec\theta+\tan\theta)(1-\sin\theta)}$ is equal to:

- Ans
- 1. $2\sec\theta$
 - 2. $2\operatorname{cosec}\theta$
 - 3. $\operatorname{cosec}\theta$
 - 4. $\sec\theta$

Question ID : 6549781811
Status : Answered
Chosen Option : 3

Q.100 The volume of a solid right circular cylinder of height 8 cm is $392\pi\text{ cm}^3$. Its curved surface area (in cm^2) is:

- Ans
- 1. 161π
 - 2. 96π
 - 3. 210π
 - 4. 112π

Question ID : 6549781806
Status : Answered
Chosen Option : 4

Combined Graduate Level Examination 2019 Tier II

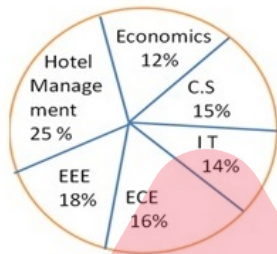
Roll Number	
Venue Name	Logiconic Mind & Co
Exam Date	18/11/2020
Exam Time	10:00 AM - 12:00 PM
Subject	CGLE Tier II Paper I Quantitative abilities

Section : Quantitative abilities

Q.1 Study the following pie-chart and table to answer the questions numbered 95 to 97.

Total number of students admitted in a university in various fields = 5000

Distribution of the number of students into various fields:



Fields	No. of Boys
Economics	56 %
C S	44 %
I T	65 %
ECE	72 %
EEE	68 %
Hotel Management	80 %

What is the average number of boys in CS, ECE and EEE fields?

- Ans
- 1. 406
 - 2. 516
 - 3. 514
 - 4. 506

Question ID : 8161615473

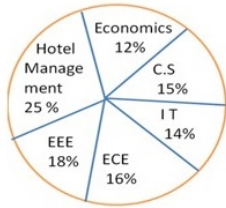
Status : Answered

Chosen Option : 4

Q.2 Study the following pie-chart and table to answer the questions numbered 95 to 97.

Total number of students admitted in a university in various fields = 5000

Distribution of the number of students into various fields:



Fields	No. of Boys
Economics	56 %
C S	44 %
I T	65 %
ECE	72 %
EEE	68 %
Hotel Management	80 %

What is the difference between the number of girls in IT and number of girls in ECE?

- Ans**
- 1. 21
 - 2. 30
 - 3. 25
 - 4. 20

Question ID : 8161615474

Status : Answered

Chosen Option : 1

Q.3 A, B and C can do a work separately in 18, 36 and 54 days, respectively. They started the work together, but B and C left 5 days and 10 days, respectively, before the completion of the work. In how many days was the work finished?

- Ans**
- 1. 15 days
 - 2. 13 days
 - 3. 14 days
 - 4. 12 days

Question ID : 8161615423

Status : Answered

Chosen Option : 2

Q.4 If $(\sin \theta + \operatorname{cosec} \theta)^2 + (\cos \theta + \sec \theta)^2 = k + \tan^2 \theta + \cot^2 \theta$, then the value of k is equal to:

- Ans**
- 1. 7
 - 2. 2
 - 3. 5
 - 4. 9

Question ID : 8161615463

Status : Answered

Chosen Option : 1

Q.5 An athlete runs an 800 m race in 96 seconds. His speed (in km/h) is:

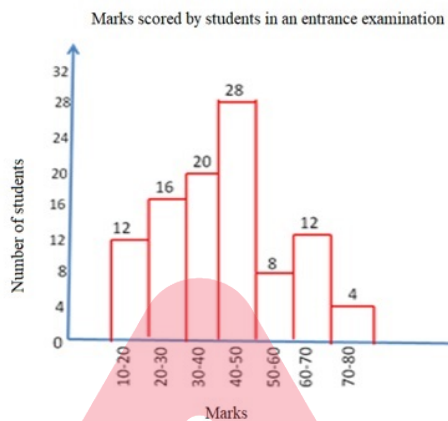
- Ans
- 1. 20 km/h
 - 2. 40 km/h
 - 3. 30 km/h
 - 4. 25 km/h

Question ID : 8161615419

Status : Answered

Chosen Option : 3

Q.6 Study the following histogram and answer the given question.



What is the ratio of the number of students who scored 30 or more marks, but below 40 marks, to the total number of students in the entrance examination?

- Ans
- 1. 1 : 5
 - 2. 3 : 5
 - 3. 2 : 3
 - 4. 2 : 5

Question ID : 8161615471

Status : Answered

Chosen Option : 1

Q.7 In a triangle ABC, $AB = 6\sqrt{3}$ cm, $AC = 12$ cm and $BC = 6$ cm. Then measure of $\angle B$ is equal to:

- Ans
- 1. 90°
 - 2. 45°
 - 3. 70°
 - 4. 60°

Question ID : 8161615448

Status : Answered

Chosen Option : 1

Q.8 If A's income is 60% less than B's income, then B's income is what percentage more than that of A's income?

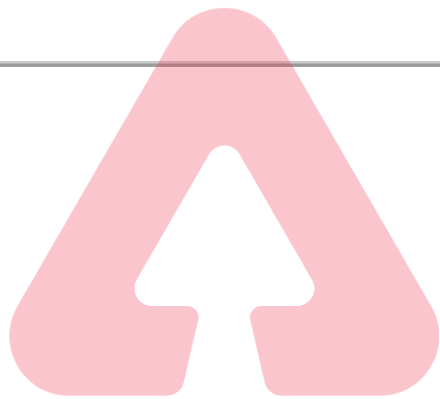
- Ans
- 1. 40%
 - 2. 150%
 - 3. 120%
 - 4. 80%

Question ID : 8161615395
Status : Answered
Chosen Option : 2

Q.9 ABCD is a rhombus with $\angle ABC = 52^\circ$. The measure of $\angle ACD$ is:

- Ans
- 1. 54°
 - 2. 26°
 - 3. 48°
 - 4. 64°

Question ID : 8161615459
Status : Answered
Chosen Option : 4

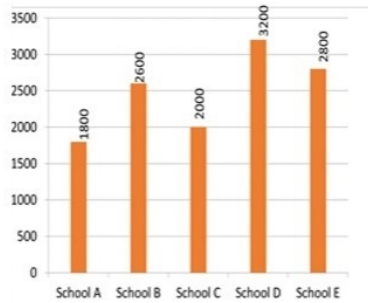


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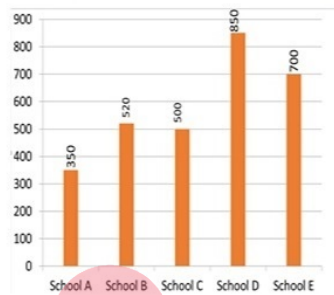
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Q.10 Study the following bar graph and answer the questions given below.

Total number of boys and girls in schools A, B, C, D and E.

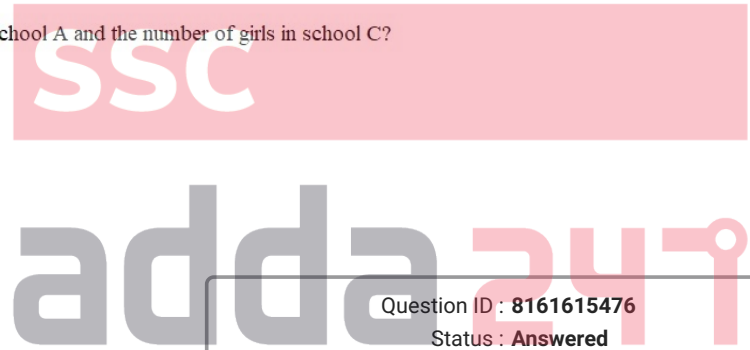


Difference between the number of boys and girls in schools A, B, C, D and E.



What is the difference between the number of girls in school A and the number of girls in school C?

- Ans
- 1. 20
 - 2. 30
 - 3. 35
 - 4. 25



Question ID : 8161615476
Status : Answered
Chosen Option : 4

Q.11 A man walks at a speed of 8 km/h. After every kilometre, he takes a rest for 4 minutes. How much time will he take to cover a distance of 6 km?

- Ans
- 1. 70 minutes
 - 2. 60 minutes
 - 3. 69 minutes
 - 4. 65 minutes

Question ID : 8161615420
Status : Answered
Chosen Option : 4

Q.12 The ratio between the present ages of A and B is 3 : 5. If the ratio of their ages five years hence becomes 13 : 20, then the present age of B is:

- Ans**
- 1. 30 years
 - 2. 32 years
 - 3. 40 years
 - 4. 35 years

Question ID : 8161615412
Status : Answered
Chosen Option : 4

Q.13 At what rate per cent per annum will a sum of ₹15,625 amount to ₹21,952 in three years, if the interest is compounded annually?

- Ans**
- 1. 12%
 - 2. 8%
 - 3. 9%
 - 4. 10%

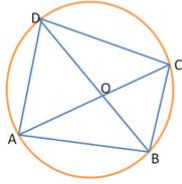
Question ID : 8161615407
Status : Answered
Chosen Option : 1

Q.14 If $x\left(3 - \frac{2}{x}\right) = \frac{3}{x}$, then the value of $x^3 - \frac{1}{x^3}$ is equal to:

- Ans**
- 1. $\frac{8}{27}$
 - 2. $\frac{61}{27}$
 - 3. $\frac{62}{27}$
 - 4. $\frac{52}{27}$

Question ID : 8161615445
Status : Answered
Chosen Option : 3

Q.15 A cyclic quadrilateral ABCD is such that $AB = BC$, $AD = DC$ and AC and BD intersect at O. If $\angle CAD = 46^\circ$, then the measure of $\angle AOB$ is equal to:



- Ans
- 1. 90°
 - 2. 80°
 - 3. 84°
 - 4. 86°

Question ID : 8161615457
Status : Answered
Chosen Option : 1

Q.16 The ratio of boys and girls in a school is 27 : 23. If the difference between the number of boys and girls is 200, then find the number of boys.

- Ans
- 1. 1350
 - 2. 1250
 - 3. 1300
 - 4. 1200

Question ID : 8161615409
Status : Answered
Chosen Option : 1

Q.17 If the surface area of a sphere is 1386 cm^2 , then its volume is:

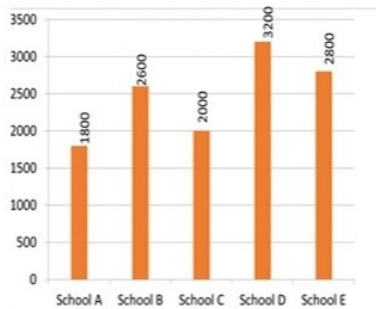
(Take $\pi = \frac{22}{7}$)

- Ans
- 1. 8451 cm^3
 - 2. 4851 cm^3
 - 3. 5418 cm^3
 - 4. 4581 cm^3

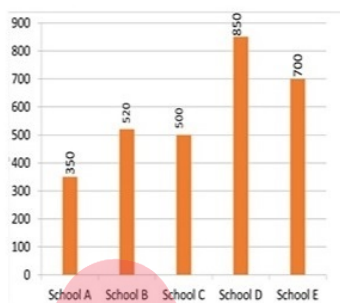
Question ID : 8161615437
Status : Answered
Chosen Option : 2

Q.18 Study the following bar graph and answer the questions given below.

Total number of boys and girls in schools A, B, C, D and E.

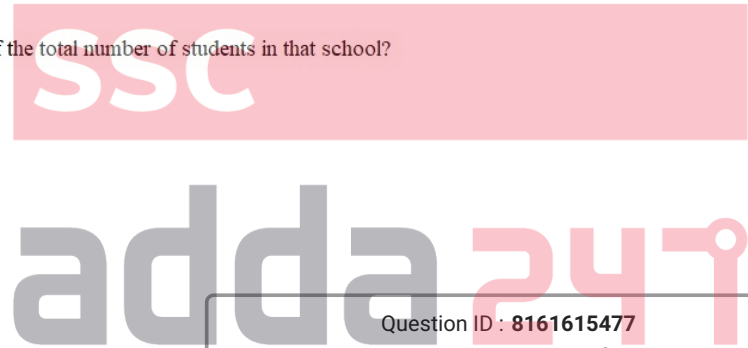


Difference between the number of boys and girls in schools A, B, C, D and E.



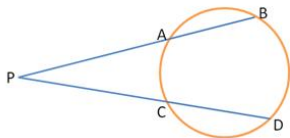
The number of boys in school B is what percentage of the total number of students in that school?

- Ans
- 1. 40%
 - 2. 50%
 - 3. 60%
 - 4. 55%



Question ID : 8161615477
Status : Answered
Chosen Option : 3

Q.19 In the figure, chords AB and CD of a circle intersect externally at P. If AB = 4 cm, CD = 11 cm and PD = 15 cm, then the length of PB is:



- Ans
- 1. 10 cm
 - 2. 8 cm
 - 3. 14 cm
 - 4. 12 cm

Question ID : 8161615458
Status : Answered
Chosen Option : 1

Q.20 The ratio of the height and the diameter of a right circular cone is 6 : 5 and its volume is $\frac{2200}{7} \text{ cm}^3$. What is its slant height?
(Take $\pi = \frac{22}{7}$)

- Ans**
- 1. 26 cm
 - 2. 13 cm
 - 3. 25 cm
 - 4. 5 cm

Question ID : **8161615433**
Status : **Answered**
Chosen Option : **1**

Q.21 A and B together can do a piece of work in 12 days. A alone can do it in 18 days. In how many days B alone can do the work?

- Ans**
- 1. 36 days
 - 2. 24 days
 - 3. 32 days
 - 4. 30 days

Question ID : **8161615426**
Status : **Answered**
Chosen Option : **1**

Q.22 If $x^2 + \frac{1}{x^2} = 7$, then the value of $x^3 + \frac{1}{x^3}$ where $x > 0$ is equal to:

- Ans**
- 1. 18
 - 2. 12
 - 3. 15
 - 4. 16

Question ID : **8161615444**
Status : **Answered**
Chosen Option : **1**

Q.23 If $x - \frac{3}{x} = 6$, $x \neq 0$, then the value of $\frac{x^4 - 27}{x^2 - 3x - 3}$ is:

- Ans**
- 1. 80
 - 2. 270
 - 3. 54
 - 4. 90

Question ID : **8161615443**
Status : **Answered**
Chosen Option : **4**

Q.24 The numerator of a fraction is 6 less than its denominator. If the numerator is decreased by 1 and the denominator is increased by 5, then the denominator becomes 4 times the numerator. Find the fraction.

- Ans
- 1. $\frac{5}{11}$
 - 2. $\frac{3}{11}$
 - 3. $\frac{4}{11}$
 - 4. $\frac{7}{11}$

Question ID : 8161615392

Status : Answered

Chosen Option : 1

Q.25 The volume of a hemisphere is $2425\frac{1}{2} \text{ cm}^3$. Find its radius.

(Take $\pi = \frac{22}{7}$)

- Ans
- 1. 12 cm
 - 2. 10 cm
 - 3. 10.5 cm
 - 4. 9.5 cm

Question ID : 8161615428

Status : Answered

Chosen Option : 3

Q.26 The radius and height of a cylinder are in the ratio 4 : 7 and its volume is 2816 cm^3 . Find its radius. (Take $\pi = \frac{22}{7}$)

- Ans
- 1. 5 cm
 - 2. 7 cm
 - 3. 8 cm
 - 4. 6 cm

Question ID : 8161615430

Status : Answered

Chosen Option : 3

Q.27 The exterior angle obtained on producing the base of a triangle both the ways are 121° and 104° . What is the measure of the largest angle of the triangle?

- Ans
- 1. 75°
 - 2. 76°
 - 3. 74°
 - 4. 66°

Question ID : 8161615446

Status : Answered

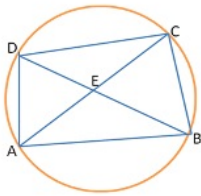
Chosen Option : 2

Q.28 Find the sum of $6 + 8 + 10 + 12 + 14 + \dots + 40$.

- Ans
- 1. 414
 - 2. 424
 - 3. 1600
 - 4. 400

Question ID : 8161615378
Status : Answered
Chosen Option : 1

Q.29 In the given figure, $\angle DBC = 65^\circ$, $\angle BAC = 35^\circ$ and $AB = BC$, then the measure of $\angle ECD$ is equal to:



- Ans
- 1. 65°
 - 2. 50°
 - 3. 55°
 - 4. 45°

SSC

Question ID : 8161615456
Status : Answered
Chosen Option : 4

Q.30 एक व्यक्ति ने 5 घंटे में 42 km की दूरी तय की। उसने यात्रा का कुछ भाग पैदल 6 km/h की चाल से और कुछ भाग साइकिल से 10 km/h की चाल से तय किया। उसने पैदल कितनी दूरी तय की?

- Ans
- 1. 18 km
 - 2. 15 km
 - 3. 10 km
 - 4. 12 km

Question ID : 8161615421
Status : Answered
Chosen Option : 4

Q.31 Find the least number which when divided by 12, 18, 24 and 30 leaves 4 as remainder in each case, but when divided by 7 leaves no remainder.

- Ans
- 1. 366
 - 2. 364
 - 3. 384
 - 4. 634

Question ID : 8161615389
Status : Answered
Chosen Option : 2

Q.32 A conical tent has to accommodate 25 persons. Each person must have 4 m^2 of space on the ground and 80 m^3 of air to breathe. Find the height of the tent.

- Ans
- 1. 60 m
 - 2. 50 m
 - 3. 40 m
 - 4. 45 m

Question ID : 8161615434
Status : Answered
Chosen Option : 1

Q.33 The graphs of the linear equations $4x - 2y = 10$ and $4x + ky = 2$ intersect at a point $(a, 4)$. The value of k is equal to:

- Ans
- 1. 4
 - 2. -3
 - 3. 3
 - 4. -4

Question ID : 8161615439
Status : Answered
Chosen Option : 4

Q.34 At what rate of interest will a sum of ₹4,500 amount to ₹6,525 at simple interest for 5 years?

- Ans
- 1. 10%
 - 2. 9%
 - 3. 8%
 - 4. 12%

Question ID : 8161615406
Status : Answered
Chosen Option : 2

Q.35 The average of five positive numbers is 56. If the first number is three-fourth of the sum of the last four numbers, then the average of the last four numbers is:

- Ans
- 1. 35
 - 2. 40
 - 3. 30
 - 4. 50

Question ID : 8161615414
Status : Answered
Chosen Option : 2

Q.36 The sum of three numbers is 280. If the ratio between the first and second numbers is 2 : 3 and the ratio between second and third numbers is 4 : 5, then find the second number.

- Ans
- 1. 80
 - 2. 90
 - 3. 86
 - 4. 96

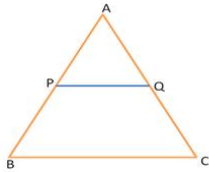
Question ID : 8161615410
Status : Answered
Chosen Option : 4

Q.37 If $\frac{\sec \theta + \tan \theta}{\sec \theta - \tan \theta} = 2\frac{51}{79}$, then the value of $\sin \theta$ is equal to:

- Ans
- 1. $\frac{35}{72}$
 - 2. $\frac{39}{72}$
 - 3. $\frac{91}{144}$
 - 4. $\frac{65}{144}$

Question ID : 8161615467
Status : Answered
Chosen Option : 4

Q.38 In a triangle ABC, P and Q are points on AB and AC, respectively, such that AP = 1 cm, PB = 3 cm, AQ = 1.5 cm, and CQ = 4.5 cm. If the area of $\triangle APQ$ is 12 cm^2 , then find the area of BPQC.



- Ans
- 1. 192 cm^2
 - 2. 182 cm^2
 - 3. 190 cm^2
 - 4. 180 cm^2

Question ID : 8161615455
Status : Answered
Chosen Option : 4

Q.39 If $\frac{8+2\sqrt{3}}{3\sqrt{3}+5} = a\sqrt{3} - b$, then the value of $a+b$ is equal to:

- Ans
- 1. 18
 - 2. 15
 - 3. 24
 - 4. 16

SSC

Question ID : 8161615390
Status : Answered
Chosen Option : 1

Q.40 In a two-digit number, its units digit exceeds its tens digit by 2 and that the product of the given number and the sum of its digits is equal to 460. The number is:

- Ans
- 1. 48
 - 2. 64
 - 3. 46
 - 4. 36

Question ID : 8161615391
Status : Answered
Chosen Option : 3

Q.41 An article is listed at ₹7,600 and the discount offered unit is 10%. What additional discount must be given to bring the net selling price to ₹5,814?

- Ans**
- 1. 8%
 - 2. 10%
 - 3. 12%
 - 4. 15%

Question ID : 8161615404
Status : Answered
Chosen Option : 4

Q.42 A and B can do a piece of work in 18 days. B and C together can do it in 30 days. If A is twice as good a workman as C, find in how many days B alone can do the work?

- Ans**
- 1. 90 days
 - 2. 100 days
 - 3. 80 days
 - 4. 75 days

Question ID : 8161615424
Status : Answered
Chosen Option : 1

Q.43 Anil bought two articles A and B at a total cost of ₹10,000. He sold the article A at 15% profit and the article B at 10% loss. In the whole deal, he made no profit or no loss. Find the selling price of the article A.

- Ans**
- 1. ₹4,500
 - 2. ₹5,400
 - 3. ₹4,600
 - 4. ₹4,200

Question ID : 8161615399
Status : Answered
Chosen Option : 3

Q.44 ABC is an equilateral triangle with side 12 cm and AD is the median. Find the length of GD if G is the centroid of $\triangle ABC$.

- Ans**
- 1. $6\sqrt{3}$ cm
 - 2. $3\sqrt{3}$ cm
 - 3. $4\sqrt{3}$ cm
 - 4. $2\sqrt{3}$ cm

Question ID : 8161615449
Status : Answered
Chosen Option : 4

Q.45 A, B and C together invests ₹53,000 in a business. A invests ₹5,000 more than B and B invests ₹6,000 more than C. Out of a total profit of ₹31,800, find the share of A.

- Ans**
- 1. ₹12,800
 - 2. ₹12,500
 - 3. ₹13,500
 - 4. ₹13,800

Question ID : 8161615415
Status : Answered
Chosen Option : 4

Q.46 Rahul invested equal sums of money at compound interest under two schemes A and B. Under scheme A, the interest rate was 10% per annum and under scheme B, the interest rate was 12% p.a. The compound interest after two years on the sum invested in scheme A was ₹1,050. How much is the interest earned under scheme B after two years, if the interest is compounded annually in both schemes?

- Ans**
- 1. ₹1,722
 - 2. ₹1,270
 - 3. ₹1,272
 - 4. ₹1,372

SSC

Question ID : 8161615408
Status : Answered
Chosen Option : 3

Q.47 If $\sec \theta + \tan \theta = 3$, then the value of $\sec \theta$ is:

- Ans**
- 1. $\frac{4}{3}$
 - 2. $\frac{3}{4}$
 - 3. $\frac{3}{5}$
 - 4. $\frac{5}{3}$

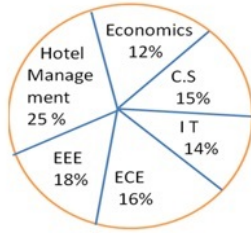
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Question ID : 8161615464
Status : Answered
Chosen Option : 4

Q.48 Study the following pie chart and table to answer the question

Total number of students admitted in a university in various fields = 5000

Distribution of the number of students into various fields:



Fields	No. of Boys
Economics	56 %
C S	44 %
I T	65 %
ECE	72 %
EEE	68 %
Hotel Management	80 %

The ratio of the number of boys in Economics to the number of students in Economics is:

- Ans
- ✓ 1. 14 : 25
 - ✗ 2. 12 : 25
 - ✗ 3. 13 : 25
 - ✗ 4. 17 : 25

Question ID : 8161615472

Status : Answered

Chosen Option : 1

Q.49 A divisor is 15 times the quotient and 3 times the remainder. If the remainder is 40, find the dividend.

- Ans
- ✗ 1. 900
 - ✗ 2. 750
 - ✓ 3. 1000
 - ✗ 4. 600

Question ID : 8161615379

Status : Answered

Chosen Option : 3

Q.50

If $x + \frac{16}{x} = 8$, then the value of $x^2 + \frac{32}{x^2}$ is:

- Ans
- ✗ 1. 20
 - ✗ 2. 24
 - ✗ 3. 16
 - ✓ 4. 18

Question ID : 8161615442

Status : Answered

Chosen Option : 4

Q.51 A sum of ₹1,50,000 is distributed among three persons – A, B and C – so that they receive 20%, 30% and 50%, respectively. A receives the same amount from another sum of money which is distributed among them so that they receive 50%, 30% and 20%, respectively. Find the total amount received from both sums of money, by B.

- Ans**
- 1. ₹58,000
 - 2. ₹60,000
 - 3. ₹55,000
 - 4. ₹63,000

Question ID : **8161615397**
Status : **Answered**
Chosen Option : **4**

Q.52 An umbrella is marked for ₹150 and sold for ₹138. The rate of discount is:

- Ans**
- 1. 5%
 - 2. 8%
 - 3. 6%
 - 4. 9%

Question ID : **8161615403**
Status : **Answered**
Chosen Option : **2**

Q.53 The sum of length, breadth and height of a cuboid is 20 cm. If the length of the diagonal is 12 cm, then find the total surface area of cuboid.

- Ans**
- 1. 364 cm^2
 - 2. 256 cm^2
 - 3. 356 cm^2
 - 4. 264 cm^2

Question ID : **8161615438**
Status : **Answered**
Chosen Option : **2**

Q.54 The interior angle of a regular polygon exceeds its exterior angle by 90° . The number of sides of the polygon is:

- Ans**
- 1. 8
 - 2. 6
 - 3. 10
 - 4. 12

Question ID : **8161615452**
Status : **Answered**
Chosen Option : **1**

Q.55 A and B can do a work together in 18 days. A is three times as efficient as B. In how many days can B alone complete the work?

- Ans**
- 1. 60 days
 - 2. 72 days
 - 3. 54 days
 - 4. 64 days

Question ID : 8161615425
Status : Answered
Chosen Option : 2

Q.56 The curved surface area of a cylinder is five times the area of its base. Find the ratio of radius and height of the cylinder.

- Ans**
- 1. 2 : 3
 - 2. 3 : 5
 - 3. 2 : 5
 - 4. 3 : 4

Question ID : 8161615431
Status : Answered
Chosen Option : 3

Q.57 The value of $5 - \frac{8 + 2\sqrt{15}}{4} - \frac{1}{8 + 2\sqrt{15}}$ is equal to:

- Ans**
- 1. $\frac{1}{4}$
 - 2. 1
 - 3. $\frac{2}{3}$
 - 4. $\frac{1}{2}$

Question ID : 8161615386
Status : Answered
Chosen Option : 2

Q.58 In an examination, 92% of the students passed and 480 students failed. If so, how many students appeared in the examination?

- Ans**
- 1. 5800
 - 2. 6200
 - 3. 6000
 - 4. 5000

Question ID : 8161615393
Status : Answered
Chosen Option : 3

Q.59 The sum of weights of A and B is 80 kg. 50% of A's weight is $\frac{5}{6}$ times the weight of B. Find the difference between their weights.

- Ans
- 1. 20 kg
 - 2. 10 kg
 - 3. 25 kg
 - 4. 15 kg

Question ID : 8161615394
Status : Answered
Chosen Option : 1

Q.60 If $\frac{b}{a} = 0.7$, find the value of $\frac{a-b}{a+b} + \frac{11}{34}$.

- Ans
- 1. 0.2
 - 2. 1
 - 3. 0.5
 - 4. 0.3

Question ID : 8161615382
Status : Answered
Chosen Option : 3

Q.61 If $\frac{\cos^2 \theta}{\cot^2 \theta - \cos^2 \theta} = 3$, where $0^\circ < \theta < 90^\circ$ then the value of θ is:

- Ans
- 1. 45°
 - 2. 50°
 - 3. 60°
 - 4. 30°

Question ID : 8161615460
Status : Answered
Chosen Option : 3

Q.62 The price of a variety of a commodity is ₹7/kg and that of another is ₹12/kg. Find the ratio in which two varieties should be mixed so that the price of the mixture is ₹10/kg.

- Ans
- 1. 3 : 4
 - 2. 2 : 3
 - 3. 4 : 5
 - 4. 2 : 5

Question ID : 8161615418
Status : Answered
Chosen Option : 2

Q.63 A dealer sold an article at a loss of 2%. Had he sold it for ₹44 more, he would have gained 20%. Find the cost price of the article.

- Ans
- 1. ₹250
 - 2. ₹300
 - 3. ₹400
 - 4. ₹200

Question ID : 8161615400
Status : Answered
Chosen Option : 4

Q.64 If $2 = x + \frac{1}{1 + \frac{1}{5 + \frac{1}{2}}}$, then the value of x is equal to:

- Ans
- 1. $\frac{14}{13}$
 - 2. 1
 - 3. $\frac{13}{15}$
 - 4. $\frac{15}{13}$

SSC

Question ID : 8161615383
Status : Answered
Chosen Option : 4

Q.65 Evaluate the following:
 $5 - [96 \div 4 \text{ of } 3 - (16 - 55 \div 5)]$

- Ans
- 1. 0
 - 2. 4
 - 3. 3
 - 4. 2

Question ID : 8161615380
Status : Answered
Chosen Option : 4

Q.66 In a triangle ABC, D is a point on BC such that $\frac{AB}{AC} = \frac{BD}{DC}$. If $\angle B = 68^\circ$ and $\angle C = 52^\circ$, then measure of $\angle BAD$ is equal to:

- Ans
- 1. 50°
 - 2. 40°
 - 3. 60°
 - 4. 30°

Question ID : 8161615450
Status : Answered
Chosen Option : 4

Q.67 If $\frac{1}{4.263} = 0.2346$, find the value of $\frac{1}{0.0004263}$.

- Ans
- 1. 2346
 - 2. 4.263
 - 3. 2.346
 - 4. 4263

Question ID : 8161615381
Status : Answered
Chosen Option : 1

Q.68 The length of the shadow of a vertical tower on level ground increases by 10 m when the altitude of the sun changes from 45° to 30° . The height of the tower is:

- Ans
- 1. $10\sqrt{3} m$
 - 2. $5\sqrt{3} m$
 - 3. $5(\sqrt{3} + 1)m$
 - 4. $10(\sqrt{3} + 1)m$

Question ID : 8161615470
Status : Answered
Chosen Option : 3

Q.69 Find the number of prime factors in the product $(30)^5 \times (24)^5$.

- Ans
- 1. 35
 - 2. 30
 - 3. 45
 - 4. 10

Question ID : 8161615384
Status : Answered
Chosen Option : 1

Q.70 Ramesh started a business investing a sum of ₹40,000. Six months later, Kevin joined by investing ₹20,000. If they make a profit of ₹10,000 at the end of the year, how much is the share of Kevin?

- Ans
- 1. ₹2,000
 - 2. ₹4,000
 - 3. ₹3,000
 - 4. ₹2,500

Question ID : 8161615416
Status : Answered
Chosen Option : 1

Q.71 If $3 \sin x + 4 \cos x = 2$, then the value of $3 \cos x - 4 \sin x$ is equal to:

- Ans
- 1. $\sqrt{23}$
 - 2. $\sqrt{21}$
 - 3. $\sqrt{29}$
 - 4. 21

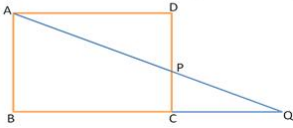
Question ID : 8161615462
Status : Answered
Chosen Option : 2

Q.72 If $\cos \theta = \frac{5}{13}$, then the value of $\tan^2 \theta + \sec^2 \theta$ is equal to:

- Ans
- 1. $\frac{303}{25}$
 - 2. $\frac{313}{25}$
 - 3. $\frac{233}{25}$
 - 4. $\frac{323}{25}$

Question ID : 8161615465
Status : Answered
Chosen Option : 2

Q.73 In the given figure, ABCD is a rectangle and P is a point on DC such that $BC = 24$ cm, $DP = 10$ cm, and $CD = 15$ cm. If AP produced intersects BC produced at Q, then find the length of AQ.



- Ans**
- 1. 24 cm
 - 2. 26 cm
 - 3. 39 cm
 - 4. 35 cm

Question ID : 8161615454

Status : Answered

Chosen Option : 3

Q.74 In a triangle ABC, $AB = AC$ and the perimeter of $\triangle ABC$ is $8(2 + \sqrt{2})$ cm. If the length of BC is $\sqrt{2}$ times the length of AB, then find the area of $\triangle ABC$.

- Ans**
- 1. 32 cm^2
 - 2. 28 cm^2
 - 3. 16 cm^2
 - 4. 36 cm^2

SSC

Question ID : 8161615451

Status : Answered

Chosen Option : 1

Q.75 The radii of two cylinders are in the ratio 3 : 4 and their heights are in the ratio 8 : 5. The ratio of their volumes is equal to:

- Ans**
- 1. 9 : 10
 - 2. 8 : 9
 - 3. 9 : 11
 - 4. 7 : 10

adda247

Question ID : 8161615432

Status : Answered

Chosen Option : 1

Q.76 If $\sin(x + y) = \cos(x - y)$, then the value of $\cos^2 x$ is:

- Ans**
- 1. $\frac{1}{2}$
 - 2. 3
 - 3. 5
 - 4. $\frac{1}{4}$

Question ID : 8161615469

Status : Answered

Chosen Option : 1

Q.77 If $\sin \theta + \sin^2 \theta = 1$, then the value of $\cos^2 \theta + \cos^4 \theta$ is equal to:

- Ans
- 1. 5
 - 2. $\frac{1}{2}$
 - 3. 1
 - 4. 0

Question ID : 8161615461
Status : Answered
Chosen Option : 3

Q.78 The number of lead balls, each 3 cm in diameter, that can be made from a solid lead sphere of diameter 42 cm is:

- Ans
- 1. 2744
 - 2. 4722
 - 3. 7244
 - 4. 2742

Question ID : 8161615429
Status : Answered
Chosen Option : 1

Q.79 A delivery boy started from his office at 10 a.m. to deliver an article. He rode his scooter at a speed of 32 km/h. He delivered the article and waited for 15 minutes to get the payment. After the payment was made, he reached his office at 11.25 a.m., travelling at a speed of 24 km/h. Find the total distance travelled by the boy.

- Ans
- 1. 35 km
 - 2. 40 km
 - 3. 32 km
 - 4. 30 km

Question ID : 8161615422
Status : Answered
Chosen Option : 3

Q.80 If $x = \sqrt{-\sqrt{3} + \sqrt{3 + 8\sqrt{7} + 4\sqrt{3}}}$ where $x > 0$, then the value of x is equal to:

- Ans
- 1. 3
 - 2. 4
 - 3. 1
 - 4. 2

Question ID : 8161615387
Status : Answered
Chosen Option : 4

Q.81 If the perimeter of an isosceles right triangle is $8(\sqrt{2}+1)$ cm, then the length of the hypotenuse of the triangle is:

- Ans
- 1. 8 cm
 - 2. 12 cm
 - 3. 10 cm
 - 4. 24 cm

Question ID : 8161615447
Status : Answered
Chosen Option : 1

Q.82 The base of a pyramid is an equilateral triangle of side 10 m. If the height of the pyramid is $40\sqrt{3}$ m, then the volume of the pyramid is:

- Ans
- 1. 1000 m^3
 - 2. 1200 m^3
 - 3. 900 m^3
 - 4. 800 m^3

Question ID : 8161615427
Status : Answered
Chosen Option : 1

Q.83 What is to be added to 15% of 180 so that the sum is equal to 20% of 360?

- Ans
- 1. 45
 - 2. 40
 - 3. 60
 - 4. 50

Question ID : 8161615396
Status : Answered
Chosen Option : 1

Q.84 On selling 38 balls at ₹2,240, there is a loss equal to the cost price of 6 balls. The cost price of a ball is equal to:

- Ans
- 1. ₹80
 - 2. ₹70
 - 3. ₹60
 - 4. ₹50

Question ID : 8161615401
Status : Answered
Chosen Option : 2

Q.85 The sum of two positive numbers is 240 and their HCF is 15. Find the number of pairs of numbers satisfying the given condition.

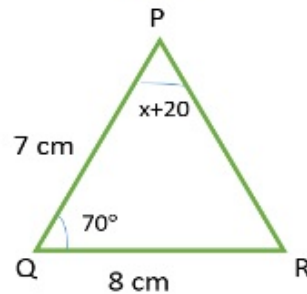
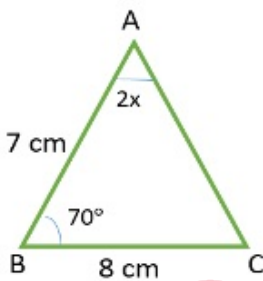
- Ans
- 1. 5
 - 2. 2
 - 3. 8
 - 4. 4

Question ID : 8161615388

Status : Answered

Chosen Option : 4

Q.86 In the given figure, the measure of $\angle A$ is:



- Ans
- 1. 50°
 - 2. 40°
 - 3. 20°
 - 4. 60°

SSC

adda247

Question ID : 8161615453

Status : Answered

Chosen Option : 2

Q.87 What is the reflection of the point $(5, -3)$ in the line $y = 3$?

- Ans
- 1. $(5, 3)$
 - 2. $(5, 9)$
 - 3. $(5, -6)$
 - 4. $(-5, 3)$

Question ID : 8161615440

Status : Answered

Chosen Option : 2

Q.88

If $\sqrt{x} + \frac{1}{\sqrt{x}} = 3$, then the value of $x^3 + \frac{1}{x^3}$ is:

- Ans
- 1. 326
 - 2. 322
 - 3. 324
 - 4. 422

Question ID : 8161615441
Status : Answered
Chosen Option : 2

Q.89 The average ages of Kishore, his wife and their child 6 years ago was 38 years and that of his wife and their child 8 years ago was 32 years. Find the present age of Kishore.

- Ans
- 1. 48 years
 - 2. 52 years
 - 3. 55 years
 - 4. 50 years

Question ID : 8161615413
Status : Answered
Chosen Option : 2

Q.90 The selling price of one article after allowing a discount of 15% on its cost price, is the same as the selling price of another article after allowing a discount of 25% on its cost price. If the sum of the cost prices of both the articles is ₹640, then find the selling price of each article.

- Ans
- 1. ₹250
 - 2. ₹340
 - 3. ₹280
 - 4. ₹255

Question ID : 8161615402
Status : Answered
Chosen Option : 4

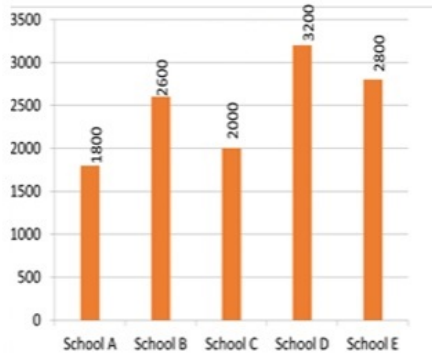
Q.91 In how much time will the simple interest on a certain sum of money be $\frac{6}{5}$ times of the sum at 20% per annum?

- Ans
- 1. 7 years
 - 2. 8 years
 - 3. 5 years
 - 4. 6 years

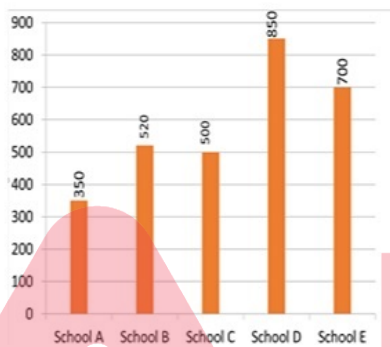
Question ID : 8161615405
Status : Answered
Chosen Option : 4

Q.92 Study the following bar graph and answer the questions given below.

Total number of boys and girls in schools A, B, C, D and E.



Difference between the number of boys and girls in schools A, B, C, D and E.



SSC

What is the ratio of number of boys to the number of girls in school E?

- Ans
- ✓ 1. 5 : 3
 - ✗ 2. 7 : 4
 - ✗ 3. 4 : 3
 - ✗ 4. 5 : 4

adda247

Question ID : 8161615475
Status : Answered
Chosen Option : 1

Q.93 If the radius of a cylinder is decreased by 20% and the height is increased by 20% to form a new cylinder, then the volume will be decreased by:

- Ans
- ✓ 1. 23.2%
 - ✗ 2. 22.3%
 - ✗ 3. 32.2%
 - ✗ 4. 20.5%

Question ID : 8161615435
Status : Answered
Chosen Option : 1

Q.94 The train ticket fare from places A to B in 2nd class AC and 3rd class AC is ₹2,500 and ₹2,000, respectively. If the fares of 2nd class AC and 3rd class AC are increased by 20% and 10%, respectively, then find the ratio of the new fares of 2nd class AC and 3rd class AC.

- Ans**
- 1. 15 : 11
 - 2. 12 : 11
 - 3. 13 : 11
 - 4. 15 : 13

Question ID : 8161615411
Status : Answered
Chosen Option : 1

Q.95 The base of a right prism is a square having side of 15 cm. If its height is 8 cm, then find the total surface area.

- Ans**
- 1. 940 cm²
 - 2. 920 cm²
 - 3. 900 cm²
 - 4. 930 cm²

Question ID : 8161615436
Status : Answered
Chosen Option : 4

Q.96 If $\operatorname{cosec} 39^\circ = x$, then the value of $\frac{1}{\operatorname{cosec} 51^\circ} + \sin^2 39^\circ + \tan^2 51^\circ - \frac{1}{\sin^2 51^\circ \sec^2 39^\circ}$ is:

- Ans**
- 1. $x^2 - 1$
 - 2. $\sqrt{x^2 - 1}$
 - 3. $\sqrt{1 - x^2}$
 - 4. $1 - x^2$

Question ID : 8161615468
Status : Answered
Chosen Option : 1

Q.97 A container contains 20 L mixture in which there is 10% sulphuric acid. Find the quantity of sulphuric acid to be added in it to make the solution to contain 25% sulphuric acid.

- Ans**
- 1. 2 L
 - 2. 3 L
 - 3. 4 L
 - 4. 5 L

Question ID : 8161615417
Status : Answered
Chosen Option : 3

Q.98 Evaluate: $\frac{1}{15} + \frac{1}{35} + \frac{1}{63} + \frac{1}{99} + \frac{1}{143}$.

- Ans
- 1. $\frac{4}{39}$
 - 2. $\frac{5}{39}$
 - 3. $\frac{10}{39}$
 - 4. $\frac{7}{39}$

Question ID : 8161615385
Status : Answered
Chosen Option : 2

Q.99 If $\alpha + \beta = 90^\circ$ and $\alpha = 2\beta$, then the value of $3\cos^2\alpha - 2\sin^2\beta$ is equal to:

- Ans
- 1. $\frac{3}{4}$
 - 2. $\frac{3}{2}$
 - 3. $\frac{1}{4}$
 - 4. $\frac{4}{3}$

SSC

adda247

Question ID : 8161615466
Status : Answered
Chosen Option : 3

Q.100 A man sells two articles at ₹9,975 each. He gains 5% on one article and loses 5% on the other. Find his overall gain or loss.

- Ans
- 1. Loss ₹60
 - 2. Profit ₹50
 - 3. Profit ₹60
 - 4. Loss ₹50

Question ID : 8161615398
Status : Answered
Chosen Option : 1