SSC CGL Tier-2 4th-September-2011 Maths

Instructions

For the following questions answer them individually

Question 1

In division sum, the divisor is 4 times the quotient and twice the remainder.If a and b are respectively the divisor and the divided, then

A $\frac{4a-a^2}{a}$ =3

B $\frac{4a-a^2}{a}$

C $(a+1)^2$=4b

D $\frac{a(a+2)}{b}$ =4

   Answer: D

Question 2

If 738A6A is divisible by 11, then the value of A is

A 6

B 3

C 9

D 1

   Answer: C

Explanation:

Sum of digits at odd places is 7+8+6=21.

Sum of digits at even places is 3+2A.

Their difference = 21-(3+2A) = 18-2A

The number will be divisible by 11 if 18-2A is 11 or 0.

But to get to 11, 2A needs to be 7 where it will give a fraction as a digit.

So 18-2A = 0.

hence A = 9

Question 3

The product of two numbers is 1575 and their quotient is $\frac{9}{7}$ Then the sum of the numberis

A 74

B 78

C 80

D 90

   Answer: C

Explanation:

given, x*y = 1575 and x/y = 9/7.

So x = 9y/7

hence , (9y/7)*y = 1575

y^2 = (7/9)*1575 = 1225

y = (+/- 35.)

If y = 35, then x = 1575/35 = 45

. If y = -35, then x = -45.

So there are two solution sets, namely {45, 35} and {-45, -35)

And according to the options, the ans will be 45, 35.

Question 4

The value of is $\dfrac{(81)^{3.6} \times (9)^{2.7}}{(81)^{4.2} \times 3}$

A 3

B 6

C 9

D 8.2

   Answer: C

Question 5

$\sqrt{6 + \sqrt{6 + \sqrt{6 +}}}$ ..... **is equal to**

A 2

B 5

C 4

D 3

   Answer: D

Question 6

The sum of the squares to two natural consecutive odd numbers is 394. The sum of the numbers is

A 24

B 32

C 40

D 28

   Answer: D

Explanation:
Let first no. Be x
2nd no.will be x+2
$x^2+(x+2)^2=394$
$x^2+x^2+4x+4=394$
$2x^2+4x=390$
$2(x^2+2x)=390$
$x^2+2x=195$
$x(x+2)=195$
$x+2=195/x$
$x=195/x-2$
So no is 13 and 15

so the sum will be = 13+15 = 28

Question 7

When (67th + 67) is divided by 68, the remainderis

A   1

B   63

C   66

D   67

   Answer: C

Question 8

A can do a piece of work in 24 days, B in 52 days and C in 64 days. All being to do it together, but A leaves after 6 days and B leaves 6 days before the completion of the work. How many days did the work last?

A   15

B   20

C   18

D   30

   Answer: B

Explanation:
Number of days to complete the work

A = 24 days

B = 32 days

C = 64 days.
All worked together for 6 days,the fraction of the work that has been done is

6/24 = 1/4 by A

6/32 = 3/16 by B

6/64 = 3/32 by C.

Total fraction of work done in First 6 days =

1/4 + 3/16 + 3/32

=(8 + 6 + 3) ÷32

= 17/32.

Fraction of work left = 1 -17/32 = 15/32.

Since B leaves 6 days before the completion of the work,it means that C works alone for 6 days. The fraction of work C does alone in those 6 days is

6/64 = 3/32.

Therefore fraction of work done before B's departure =

15/32 - 3/32 = 12/32

=3/8.

Let X be the number of days in which B and C did 3/8 of the work.

Therefore, x/32 is done by B and x/64 is done by C.

This shows that

x/32 + x/64 = 3÷8

2x + x = 3 × 8

3x = 24

x = 24÷3 = 8 days.

Total number of days

= 6 + 8 + 6 = 20 days

So, the answer would be option b)20.

Question 9

The square root of $\frac{(0.75)^3}{1-0.75} + [0.75 + (0.75)^2 + 1]$

A 1

B 2

C 3

D 4

Answer: B

Explanation:
let us consider 0.75 as x. then equation becomes

$\sqrt[2]{x^3/(1-x) + (x+x^2+1)}$

$= \sqrt[2]{[x^3 + (1-x)(x+x^2+1)] \div (1-x)}$

$= \sqrt[2]{[x^3 + (1-x^3)] \div (1-x)}$

$= \sqrt[2]{1 \div (1-x)}$

If x is replaced by 0.75, we get

$= \sqrt[2]{1 \div 0.25}$

$= \sqrt[2]{4}$

=2

Question 10

Given that $\sqrt{4096} + \sqrt{40.96} + \sqrt{0.004096}$ **is**

A   70.4

B   70.464

C   71.104

D   71.4

   Answer: B

Explanation:

$\sqrt{4096} + \sqrt{40.96} + \sqrt{0.004096}$

= 64 + 6.4 + .064 = 70.464

Hence option B

Question 11

The least positive integer that should besubtracted from 3011 $\times$ 3012 so that the different is a perfect square is

A   3009

B   2010

C   3011

D   3012

   Answer: C

Explanation:

Given expression is 3011 $\times$ 3012

If we consider a= 3011, we get a(a+1). To make this a perfect square, we have to subtract it by a, then it becomes

$a(a + 1) - a = a^2 + a - a = a^2$

Therefore, 3011 $\times$ 3012 will become a perfect square when it's subtracted by 3011.

Question 12

P, Q, Rare employedto do a work forRs.5750. P and Q together finished $\frac{19}{23}$ of work AND Q and R together finished $\frac{8}{23}$ of work. Wage of Q, in rupees, is

A   2850

B   3750

C   2750

D   1000

   Answer: D

Explanation:

Given that P, Q & R are employed for a work of Rs.5750

i.e.., wages for P,Q & R is P+Q+R = 5750

Let's consider this total wages as x

Given that P and Q together finished $\frac{19}{23}$ of work

i.e.., wages paid for P & Q is P+Q = $\frac{19}{23}$x=4750 ----(1)

Also, Given that Q and R together finished $\frac{8}{23}$ of work

i.e.., wages paid for Q & R is Q+R = $\frac{8}{23}$x= 2000 ----- (2)

Adding equations (1) & (2), we get

=> P+Q+Q+R= 4750+2000

=> 5750+Q=6750=> Q=1000

Question 13

While selling, a businessman allows 40% discount on the marked price and there is a loss of 30%. If it is sold at the marked price, profit

percent will be

A 10%

B 20%

C $16\frac{2}{3}$ %

D $16\frac{1}{3}$ %

Answer: C

Explanation:

Let the marked price be Rs 100. Let the Cost price be Rs x.

A/c to question ,a businessman allows 40% discount on the marked price and there is a loss of 30%,

60 = $\frac{70}{100}x$

x = $\frac{600}{7}$

If it is sold at marked price ,

Profit = $100 - \frac{600}{7} = \frac{100}{7}$

Profit % = $\frac{\frac{100}{7}}{\frac{600}{7}} \times 100 = \frac{50}{3}$

So, the answer would be option c)$16\frac{2}{3}$ %

Question 14

A cistern has 3 pipes A, B and C. A and B call fill it in 3 and hours respectively, and C can empty it in 1 hour. If the pipes are opened at 3 p.m., 4 p.m. and 5 p.m. respectively on the same day, the cistern will be empty at

A 7:12 p.m

B 7:15 p.m

C 7:10 p.m

D 7:18 p.m

Answer: A

Explanation:

part of the cistern filled by A in 2 hrs = $\frac{1}{3} \times 2 = \frac{2}{3}$

part of cistern filled by B in 1 hr = $\frac{1}{4}$

when all the pipes are opened, net part filled in 1 hr = $\frac{1}{3} + \frac{1}{4} - 1 = \frac{4+3-12}{12} = \frac{5}{12}$

$\frac{5}{12}$ part is emptied per hour

time taken to empty $\frac{11}{12}$ part = $\frac{11}{12} \times \frac{12}{11} = \frac{11}{5}$ hrs

= 2 hrs 12 min

required time = 5 + 2 : 12 = 7 : 12 pm

Question 15

If A works alone, he would take 4 days more to complete the job than if both A and B worked together. If B worked alone,he would take 16 days more to complete the job than if A and B work together. How many days would they take to complete the work if both of them worked together?

A 10 days

B 12 days

C 6 days

D 8 days

 Answer: D

Explanation:
let A and B together complete the work in x days

time taken by A = (x + 4) days

time taken by B = (x + 16) days

therefore $\frac{1}{x+4} + \frac{1}{x+16} = \frac{1}{x}$

$\frac{x+16+x+4}{(x+4)(x+16)} = \frac{1}{x}$

$\frac{2x+20}{x^2+16x+4x+64} = \frac{1}{x}$

$\frac{2x+20}{x^2+20x+64} = \frac{1}{x}$

$2x^2 + 20x = x^2 + 20x + 64$

$x^2 = 64$

x = 8 days

Question 16

250 men can finish a work in 20 days working 5hours aday. To finish the with in 10 days working 8 hours a day,the minimum number of men required is

A 310

B 300

C 313

D 312

 Answer: C

Explanation:
M1 D1 T1 = M2 D2 T2

given M1 = 250 men

D1 = 20 days

T1 = 5 hours

D2 = 10 days

T2 = 8 hours

M2 = ?

substituting

$250 \times 20 \times 5 = M2 \times 10 \times 8$

solving M2 = $\frac{250 \times 20 \times 5}{10 \times 8} = 312.5$

312.5 approximately equal to 313

Question 17

2 men and 5 women can be a work in 12 days. 5 men and 2 women can do that work in 9 days. Only 3 women can finish the same work in

A 36 days

B 21 days

C 30 days

D 42 days

   Answer: A

Explanation:

according to the question

(2m + 5w)12 = (5m +2w) 9

24m + 60w = 45m + 18w

$\frac{w}{m} = \frac{21}{42} = \frac{1}{2}$

total work done = $(2 \times 2 + 5 \times 1) 12$

      = $9 \times 12 = 108$

3 women can finish the same work in $108 = 3 \times 1 \times t$

solving t =36 days

Question 18

By selling an article at $\frac{3}{4}$ th of themarked price, there is a gain of 25%. The ratio of the marked price and the cost price is

A 5:3

B 3:5

C 3:4

D 4:3

   Answer: A

Explanation:

let marked price, MP be 100

SP = $\frac{3}{4} \times MP$

$= \frac{3}{4} \times 100$

$= 75$

gain % = 25%

$CP = 75 \times \frac{100}{125} = 60$

$\frac{MP}{CP} = \frac{100}{60} = \frac{5}{3}$

Question 19

A and B earn in the ratio 2 : 1. They spend in the ratio 5 : 3 and save in the ratio 4 : 1. If the total monthly savings of both A and B are Rs. 5,000, the monthly income of B is

A   Rs. 7,000

B   Rs. 14,000

C   Rs. 5,000

D   Rs. 10,000

Answer: A

Explanation:

A : B (savings ratio) = 4 : 1

total savings = 5000

A's savings = 4000

B's savings = 1000

income = expenditure + saving

$\frac{2}{1} = \frac{5x+4000}{3x+1000}$

solving

2(3x + 1000) = 5x + 4000

6x + 2000 = 5x + 4000

x = 2000

B's income = 1000 + 3x

$= 1000 + 3 \times 2000$

= 7000

Question 20

The ratio of the sum of two numbers and their difference is 5 : 1. The ratio of the greater number to the smaller number is

A   2:3

B   3:2

C   5:1

D   1:5

Answer: B

Explanation:

let the 2 numbers be x and y

sum of 2 numbers = 5

x + y = 5............(1)

difference of 2 numbers = 1

x - y = 1...........(2)

solving (1) and (2)

x = 3

substitute x in (1)

3 + y = 5

y = 2

ratio of the greater number to the smaller number is x : y = 3 : 2

Question 21

Successive discounts of 10%, 20% will be equivalent to a single discount is

A 28%

B 32%

C 64%

D 56%

   Answer: A

Explanation:

successive discount of x% and y% = $\left(x + y - \frac{xy}{100}\right)$%

here x% = 10%

y% = 20%

required discount = $\left(20 + 10 - \frac{20 \times 10}{100}\right)$%

                = 28%

Question 22

A retailer offers the following discount scheme for buyers on an article
I.Two successive discounts of 10%.
II.A discount of 12% follows by a discount of 8%.
III.Successive discounts of 15% and 5%
IV. A discount of 20%.

A I

B II

C III

D IV

   Answer: D

Question 23

A mixture contains 80% acid and rest water. Part of the mixture that should be removed and replaced by the same amount of water to make the ratio of acid and water 4 : 3 is

A $\frac{1}{3}$ rd

B $\frac{3}{7}$ th

C $\frac{2}{3}$ rd

D $\frac{2}{7}$ th

Answer: D

Explanation:

let the quantity of mixture be 70 lt

therefore quantity of acid = $70 \times \frac{80}{100} = 56$

after replacement the quantity of acid = $\frac{70 \times 4}{7} = 40lt$

therefore (56 - 40 = 16 lt) of acid is removed from the original mixture

let x lt of the mixture is removed and replaced by water

$x \times \frac{80}{100} = 16$

solving x = 20 lt

required part of mixture = $\frac{20}{70} = \frac{2}{7}$

Question 24

An employer reduces the number of his employees in the ration 9 : 8 and increases their wages in the ration 14 :15. If the original wage was Rs, 18,900, find the ratio in which the wage bill is decreased

A 20:21

B 21:20

C 20:19

D 19:21

Answer: B

Explanation:

original number of employees = 9x

present number of employees = 8x

original wages = 14y

present wages = 15y

let original wage bill = $9x \times 14y = 126xy$

present wage bill = $8x \times 15y = 120xy$

wage bill ratio original : present = 126xy : 120xy = 21 : 20

thus wage bill decreased in the ratio 21 : 20

Question 25

The batting average for 40 innings of a cricketer is 50 runs. His highest score exceeds his lowest score by 172 runs. If these two innings are excluded, the average of the remaining 38 innings is 48 runs. The highest score of the player is

A 165

B 170

C   172

D   174

    Answer: D

Explanation:

total runs scored by the player in 40 innings = $40 \times 50 = 2000$

total runs scored by the player in 38 innings after excluding 2 innings = $38 \times 48 = 1824$

sum of the scores of the excluded innings = 2000 - 1824 = 176

given that scores of the excluded innings differ by 172

hence lets take the highest score as x+172 and lowest score as x

now x+x+172 = 176

2x = 4

x = 2

highest score = 172+2 = 174

Question 26

A and B are two alloys of gold and copper prepared by mixing metals in the ratio 7 :2 and 7 : 11 respectively. If equal quantities of the alloys are melted to form a third alloy C, the ratio of gold and copper in C will be

A   5:7

B   5:9

C   7:5

D   9:5

    Answer: C

Explanation:

ratio of gold and copper in A = 7 : 2

gold in A = $\frac{7}{9}$

copper in A = $\frac{2}{9}$

ratio of gold and copper in B = 7 : 11

gold in B = $\frac{7}{18}$

copper in B = $\frac{11}{18}$

If equal quantities of the alloys are melted to form a third alloy C

gold in C = $\frac{7}{9} + \frac{7}{18} = \frac{21}{18}$

copper in C = $\frac{2}{9} + \frac{11}{18} = \frac{15}{18}$

ratio of gold and copper in C = 21 : 15 = 7 : 5

Question 27

In a laboratory, two bottles contain mixture of acid and water in the ratio 2 : 5 in the first bottle and 7 : 3 in the second. The ratio in which the contents of these two bottles be mixed such that the new mixture has acid and water in the ratio 2:3 is

A   4:15

B 9:8

C 21:8

D 1:2

Answer: C

Explanation:

ratio of acid and water in the first bottle = 2 : 5
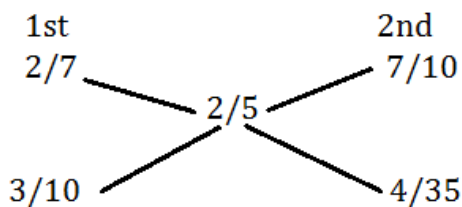
acid in the first bottle = $\frac{2}{7}$

ratio of acid and water in the second bottle = 7 : 3

acid in the second bottle = $\frac{7}{10}$

ratio of acid and water in the new mixture = 2 : 3

acid of new mixture = $\frac{2}{5}$

using alligation method

ratio in which the contents of these two bottles be mixed = $\frac{3}{10} : \frac{4}{35}$

= 21 : 8

Question 28

The average of the three numbers is 154. The first number is twice the second and the second number is twice the third. The first number is

A 264

B 132

C 88

D 66

Answer: A

Explanation:

let the 3 numbers be x,y,z

average of the three numbers is 154.

therefore sum of 3 numbers = $154 \times 3 = 462$

that is x + y + z = 462

first number is twice the second

x = 2y...........(1)

second number is twice the third.

y = 2z............(2)

from (1) $y = \frac{x}{2}$

from (2) $z = \frac{y}{2} = \frac{x}{4}$

according to the question

$x + \frac{x}{2} + \frac{x}{4} = 462$

solving x = 264

Question 29

The average salary of all the staff in an office of a corporate house is Rs. 5,000. The average salary of the officers is Rs. 14,000 and that of the rest is Rs. 4,000. If the total number of staff is 500, the number of officers is

A 10

B 15

C 25

D 50

Answer: D

Explanation:

total number of staff = 500

let the number of officers = x

rest = 500 - x

given that average salary of the officers is Rs. 14,000

total salary of officers = $14000x$

average salary of rest is 4000

total salary of rest = $(500 - x)4000$

average salary of all the staff in an office of a corporate house is Rs. 5,000.

according to the question

$\frac{14000x + (500 - x)4000}{500} = 5000$

14000x + 2000000 - 4000x = 2500000

solving x = 50

number of officers = 50

Question 30

The average marks of 40 students in an English exam is 72. Later it is found that three marks 64, 62 and 84 were wrongly entered as 68, 65 and 73. The average after mistakes were rectified is

A 70

B 72

C 71.9

D 72.1

Answer: D

Explanation:

average marks of 40 students in an English exam is 72

total marks = $72 \times 40 = 2880$

three marks 64, 62 and 84 were wrongly entered as 68, 65 and 73

average after mistakes were rectified

$2880 - (68 + 65 + 73) + (64 + 62 + 84)$

$2880 - 206 + 210 = 2884$

Required average = $\frac{2884}{40} = 72.1$

Question 31

Of three numbers,the second is thrice the first and the third number is three-fourth of the first. If the average of the three numbers is 114, the largest number is

A 72

B 216

C 354

D 26

Answer: B

Explanation:
let the three numbers be x,y,z

second is thrice the first

y = 3x...........(1)

third number is three-fourth of the first

$z = \frac{3}{4}x$

average of the three numbers is 114

sum of 3 numbers = $114 \times 3 = 342$

that is $x + 3x + \frac{3}{4}x = 342$

solving x = 72

y = 3x = $3 \times 72 = 216$

z = $\frac{3}{4}x = \frac{3}{4} \times 72 = 54$

thus the largest number is 216

Question 32

A car covers $\frac{1}{5}$ of the distance from A to B at the speed at 8 km/hr, $\frac{1}{10}$ of the distance at 25 km per hour and the remaining at the speed of 20 km per hour. Find the average speed of the whole journey.

A 12.625 km/hr

B 13.625 km/hr

C 14.625 km/hr

D 15.625 km/hr

Answer: D

Explanation:
$averagespeed = \frac{totaldistance}{totaltime}$

let the total distance be d

time taken by the car to cover $\frac{1}{5}$ of the distance from A to B at the speed at 8 km/hr, t1 = $\frac{\frac{d}{5}}{8} = \frac{d}{5\times8} = \frac{d}{40}$

time taken by the car to cover $\frac{1}{10}$ of the distance at 25 km per hour, t2 = $\frac{\frac{d}{10}}{25} = \frac{d}{25\times10} = \frac{d}{250}$

time taken by the car to cover remaining at the speed of 20 km per hour t3

remaining distance = $1 - \left(\frac{1}{5} + \frac{1}{10}\right) = \frac{7}{10}$

$t3 = \frac{\frac{7d}{10}}{20} = \frac{7d}{200}$

$averagespeed = \frac{d}{t1+t2+t3}$

$= \frac{d}{\frac{d}{40} + \frac{d}{250} + \frac{7d}{200}}$

$= \frac{d}{\frac{25d+4d+35d}{1000}} = \frac{d\times1000}{64d} = 15.625$

Question 33

A jar contains 10 red marbles and 30 green ones. How many red marbles must be added to the jar so that 60% of the marbles will be red?

A   25

B   30

C   35

D   40

   Answer: C

Question 34

If a number multiplied by 25% of itself gives a number which is 200% more than the number, then the numberis

A   12

B   16

C   20

D   24

   Answer: A

Explanation:
Let the no. be x

Then 25% of x = x/4

200% more than the x = x + 2x = 3x

(x^2)/4 = 3x

x=12

Question 35

The value on an article depreciates every year at the rate of 10% of its value. If the present value of the article isRs. 729,then its worth 3 years ago was

A   Rs. 1250

B Rs. 1000

C Rs. 1125

D Rs. 1200

Answer: B

Explanation:

let value of articles 3 years ago be x

value on an article depreciates every year at the rate of 10% of its value

$x \times \frac{90}{100} \times \frac{90}{100} \times \frac{90}{100} = 729$

$x = \frac{729 \times 100 \times 100 \times 100}{90 \times 90 \times 90} = 1000$

Question 36

The price of onions has been increased by 50%. In orderto keep the expenditure on onions the same the percentage of reduction in consumption has to be

A 50%

B $33\frac{1}{3}\%$

C 33%

D 30%

Answer: B

Explanation:

$price \times consumption = expenditure$.........(1)

assume initial price of onions be 100

initial consumption = 100

expenditure = $100 \times 100 = 10000$

price of onions has been increased by 50% = 150

assume consumption as x

expenditure remain constant as 10000

now substituting in (1)

$100 \times 100 = 10000$

$150 \times x = 10000$

$x = \frac{10000}{150} = \frac{200}{3}$

new consumption = $\frac{200}{3}$

percentage of reduction in consumption = $\frac{100 - \frac{200}{3}}{100} \times 100 = 33\frac{1}{3}\%$

Question 37

Walking at 3 km per hour, Pintu reaches his school 5 minutes late. If he walks at 4 km per hour he will be 5 minutes early. The distance of Pintu's school from his house is

A $\frac{ab}{cd}$

B 2 kms

C $2\frac{1}{2}$ Km

D 5 kms

Answer: B

Explanation:
$speed = \frac{distance}{time}$

let the distance between house and school be d

time = t

Walking at 3 km per hour, Pintu reaches his school 5 minutes late, $3 = \frac{d}{t+5}$ ....(1)

If he walks at 4 km per hour he will be 5 minutes early, $4 = \frac{d}{t-5}$ ....(2)

from (1) and (2)

3(t + 5) = 4(t - 5)

3t + 15 = 4t - 20

solving, t = 35 minutes = $\frac{35}{60} = \frac{7}{12} hours$

substitute $t = \frac{7}{12} in (1)$

$3 = \frac{d}{\frac{7}{12}+\frac{1}{12}}$

solving d = 2 km

Question 38

Nitin bought some oranges at Rs. 40 a dozen and an equal number at Rs. 30 a dozen. He sold them at Rs. 45 a dozen and made a profit of Rs. 480. The number of oranges, he bought, was

A 48

B 60

C 72

D 84

Answer: A

Explanation:
let the number of oranges bought be (x + x) = 2x dozens

total CP = 40x + 30x = 70x

total SP = $45 \times 2x = 90x$

profit = 90x - 70x = 20x

20x = 480

$x = \frac{480}{20} = 24$

number of oranges bought = $2 \times 24 = 48$

Question 39

A man buys two chairs for a total cost of Rs. 900. By selling one for $\frac{4}{5}$ of its cost and the other for $\frac{5}{4}$ of its cost, he makes a profit of Rs. 90 on the whole transaction. The cost of the lower priced chair is

A RS.360

B RS.400

C RS.420

D RS.300

   Answer: D

Explanation:
man buys two chairs for a total cost of Rs. 900

assume cost of lower priced chair = x

cost price of other chair = 900 - x

selling price of lower priced chair = $\frac{4}{5}x$

selling price of other chair = $\frac{5}{4} \times (900 - x)$

total CP = 900

total SP = $\frac{4}{5}x + \frac{5}{4} \times (900 - x)$

SP - CP = PROFIT

$$\frac{4}{5}x + \frac{5}{4}(900 - x) - 900 = 90$$

$$\frac{16x + 25(900 - x)}{20} = 990$$

$$16x + 22500 - 25x = 990 \times 20$$

solving x = 300

Question 40

By selling 100 oranges, a vendor gains the selling price of 20 oranges. His gain percent is

A 20

B 25

C 30

D 32

   Answer: B

Explanation:
selling price of 100 oranges = cost price of 100 oranges = selling price of 20 oranges

selling price of 80 oranges = cost price of 100 oranges

gain % = $\frac{difference}{sold} \times 100$

   = $\frac{100 - 80}{80} \times 100$

   = 25%

Question 41

60% of the cost price of an article is equal to 50% of its selling price. Then the percentage of profit or loss on the cost price is

A 20% loss

B $16\frac{2}{3}$ %

C 20% profit

D 10% loss

Answer: C

Explanation:

60% of the cost price of an article is equal to 50% of its selling price

$\frac{60}{100} \times CP = \frac{50}{100} \times SP$

$\frac{SP}{CP} = \frac{60 \times 100}{100 \times 50} = \frac{6}{5}$

profit % = $\frac{1}{5} \times 100 = 20$ %

Question 42

Maninder bought two horses at Rs.40,000 each. He sold one horse at 15% gain, but had to sell the second horse at a loss. If he had suffered a loss of Rs. 3,600 on the whole transaction,then the selling price of the second horse is

A Rs. 30,000

B Rs. 30,200

C Rs. 30,300

D Rs. 30,400

Answer: D

Explanation:

Maninder bought two horses at Rs.40,000 each.

cost price of 2 horses = 80000

sold one horse at 15% gain,

SP of 1 horse = $40000 \times \frac{115}{100} = 46000$

SP of 2nd horse = x

total SP = 46000 + x

loss = 3600

CP - SP = LOSS

80000 - 46000 - x = 3600

34000 - x = 3600

34000 - 3600 = x

x = 30400

Question 43

A fruit-seller buys x guava for Rs. y andsells y guavas for Rs. x. If x > y, the he made

A $\frac{x^2-y^2}{xy}$ % loss

B $\frac{x^2-y^2}{xy}$ % gain

C $\frac{x^2-y^2}{y^2}$ % loss

D $\frac{x^2-y^2}{y^2}$ % gain

Answer: D

Explanation:

let he buys xy guavas

CP of x guava = y

CP of xy guavas = y^2

SP of y guava = x

SP of xy guavas = x^2

gain % = $\frac{x^2-y^2}{y^2} \times 100$

Question 44

. If the simple interest on Rs. x at a rate of a% for m years is same as that on Rs y at a rate of a^2 % for m^2 years, then x : y is equal to

A m:a

B am:1

C $\frac{1}{m} : \frac{1}{a}$

D $\frac{1}{am}$:1

Answer: B

Explanation:

simple interest = $\frac{PNR}{100}$

SI on Rs x = $\frac{x \times a \times m}{100}$

SI on Rs y = $\frac{y \times a^2 \times m^2}{100}$

according to question

$\frac{x \times a \times m}{100} = \frac{y \times a^2 \times m^2}{100}$

$\frac{x}{y} = \frac{100 \times a^2 \times m^2}{100 \times a \times m} = \frac{am}{1}$

Question 45

A took two loans altogether for Rs. 1200 from B an C. B claimed 14% simple interest per annum, while C claimed 15% per annum. The total interest paid by A in one year was Rs. 172.Then, A borrowed

A Rs. 800 from C

B Rs. 625 from C

C Rs. 400 from B

D s. 800 from B

Answer: D

Explanation:

let money borrowed from B = x

money borrowed from C = 1200 - x

B claimed 14% simple interest in 1 year SI = $\frac{x \times 14 \times 1}{100}$

C claimed 15% simple interest in 1 year SI = $\frac{(1200-x) \times 15}{100}$

total interest = $\frac{x \times 14}{100} + \frac{(1200-x)15}{100} = 172$

$\frac{14x + 15 \times 1200 - 15x}{100} = 172$

18000 - x = 17200

x = 800

Question 46

If a regular polygon has each of its angles equalto $\frac{3}{5}$ times of two right angles, then the number of sides is

A   3

B   5

C   6

D   8

Answer: B

Explanation:

regular polygon has each of its angles equalto $\frac{3}{5}$ times of two right angles = $\frac{3}{5} \times 180 = 108°$

formula for finding number of sides, n = $x = \frac{(n-2) \times 180}{n}$

substituting,

$108 = \frac{(n-2) \times 180}{n}$

solving

108n = 180n - 360

360 = 72n

n = 5

Question 47

A square is of area 200 sq. m. A new square is formed in such a way that the length of its diagonal is $\sqrt{2}$ times of the diagonal of the given square. Then the area of the new square formed is

A   200:$\sqrt{2}$ sq.m

B   400:$\sqrt{2}$sq.m

C   400 sq.m

D   800 sq.m

Answer: C

Explanation:
area of square = $side^2 = 200$

side a= $\sqrt{200} = 10\sqrt{2}$

diagonal = $\sqrt{2}a = \sqrt{2} \times 10 \times \sqrt{2} = 20$

A new square is formed in such a way that the length of its diagonal is $\sqrt{2}$ times of the diagonal of the given square

therefore diagonal of the new square = $\sqrt{2} \times 20$

$\sqrt{2} \times 20 = \sqrt{2}a$

solving a = 20

therefore area of new square = $20^2 = 400$

Question 48

The heights of a cone, cylinder and hemisphere and equal. If their radii are in the ratio 2:3:1, then the ratio of the their volumes is

A 2 : 9 :2

B 4 : 9 :1

C 4 : 27 :2

D 2 : 3 :1

Answer: C

Explanation:
heights of a cone = height of cylinder = radius of hemisphere = r units = 1

volume of cone = $\frac{1}{3}\pi r1^2 h$

volume of cylinder = $\pi r2^2 h$

volume of hemisphere = $\frac{2}{3}\pi r^3$

ratio of the their volumes = $\frac{1}{3}\pi r1^2 h : \pi r2^2 h : \frac{2}{3}\pi r^3$

$\qquad = \frac{1}{3} \times \pi \times 4 \times 1 : \pi \times 9 \times 1 : \frac{2}{3} \times \pi \times 1$

$\qquad = \frac{4}{3} : 9 : \frac{2}{3}$

$\qquad = 4 : 27 : 2$

Question 49

A motor-boat cantravel at 10 km/hour in stillwater. Ittravelled91 km downstream in a river and then returned to the same place, taking altogether 20 hours. Find the rate of flow ofriver

A 3 km/hour

B 4 km/hour

C 2 km/hour

D 5 km/hour

Answer: A

Explanation:
motor-boat can travel at 10 km/hour in still water

distance covered in upstream and downstream = 91 km

$speed = \frac{distance}{time}$

given, rate of still water = 10 km/hr

assume rate of stream = x

then downstream speed = x + 10

upstream speed = x - 10

total time = 20 hrs

according to the question

$$20 = \frac{91}{10-x} + \frac{91}{10+x}$$

solving, x = 3 km/hr

Question 50

A man driving at $\frac{3}{4}$ th of his original speed reaches his destination 20 minutes later than the usual time. Then the usual time is

A   45 minutes

B   60 minutes

C   48 minutes

D   120 minutes

   Answer: B

Question 51

A motor boat,travelling at the same speed, can cover 25 km upstream and 39 km downstream in 8 hours . At the same speed it can travel 35 km upstream and 52 km downstream in 11 hours . The speed of the stream is

A   2 km/hr

B   3 km/hr

C   4 km/hr

D   5 km/hr

   Answer: C

Explanation:
let speed of still water = x km/hr

speed of stream = y km/hr

According to the question,

$$\frac{25}{x-y} + \frac{39}{x+y} = 8 ....(1)$$

$$\frac{35}{x-y} + \frac{52}{x+y} = 11 ....(2)$$

solving (1) and (2)

x = 9

y = 4

therefore speed of stream = 4 km/hr

Question 52

If a sum of money placed at compound interest, compound annually, doubles itself in 5 years, then the same amount of money will be 8 times of itself in

A   25

B   20

C   15

D   10

Answer: C

Explanation:
Let the principal be P

If the principal is doubled in 5 years

Then C.I = P in 5 years

Amount=P(1+r%/100)^t

2P= P(1+r%/100)^5

(1+r%/100)^5=2

Then, 8P = P(1+r%/100)^t

8={(1+r%/100)^5}^t/5

2^3 = 2^(t/5)

3=t/5

t = 15

Question 53

A person has left an amount of Rs. 1,20,000 to be divided between his two songs ages 14 years and 12 years such that they get equal amounts when each attains 18 years of age. If the amount gets a simple interest of 5% per annum, the younger son's share at percent is

A   Rs. 48,800

B   Rs. 57,600

C   Rs. 62,800

D   Rs. 84,800

Answer: B

Explanation:
let younger son's share = x

elder son's share = (120000 - x)

according to the question,

$$x + \frac{x \times 5 \times 6}{100} = (120000 - x) + \frac{(120000 - x) \times 4 \times 5}{100}$$

$$20x + 6x = 20 \times 120000 - 20x + 480000 - 4x$$

solving $x = \frac{2880000}{50} = 57600$

Question 54

If $a^2 + b^2 + c^2 = 2(a - b - c) - 3$, then the value of (a - b + c) is

A   -1

B   3

C   1

D   -2

Answer: C

Question 55

If x2 + 3x + 1 = 0, then the value of $x^3 + \frac{1}{x^3}$

A   -18

B   18

C   36

D   -36

Answer: A

Question 56

If $x^a.x^b.x^c = 1$ then the value of $a^3 + b^3 + c^3$ is

A   9

B   abc

C   a+b+c

D   3abc

Answer: D

Question 57

Base of a right pyramid is a square, length of diagonal of the base is 24 $\sqrt{2}$ m. If the volume of the pyramid is 1728 cu.m. its height is

A   7

B   8

C   9

D   10

Answer: C

Explanation:

$area\,of\,the\,base = \frac{1}{2} \times (diagonal)^2$

$$= \frac{1}{2} \times 24\sqrt{2} \times 24\sqrt{2} = 576 cm^2$$

volume of the pyramid = $\frac{1}{3} \times area\,of\,base \times height$

$1728 = \frac{1}{3} \times h \times 576$

$h = \frac{1728 \times 3}{576} = 9m$

Question 58

The height of a right circular cone and the radius of its circular base are respectively 9 cm and 3 cm. The cone is cut by a plane parallel to its base so as to divide it into two parts. The volume of the frustum (i.e., the lover part) of the cone is 44 cubic cm. The radius of the upper circular surface of the frustum (taking π = 22/7) is
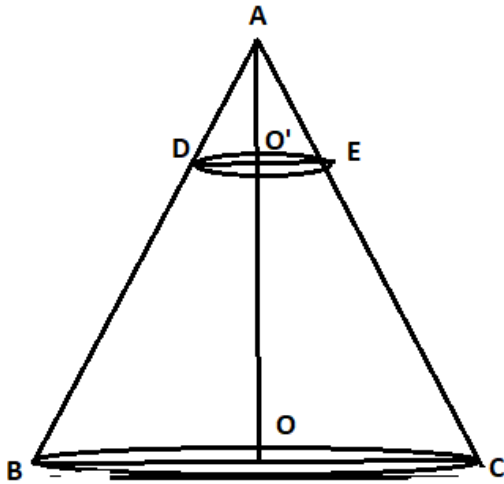
A $\sqrt[3]{12}$ cm

B $\sqrt[3]{13}$ cm

C $\sqrt[3]{6}$ cm

D $\sqrt[3]{20}$ cm

Answer: B

Explanation:

let DO' = r cm

OO' = h cm

triangle ADO' and ABO are similar

therefore $\dfrac{AO'}{AO} = \dfrac{DO'}{BO'}$

$\dfrac{9-h}{9} = \dfrac{r}{3}$

9 - h = 3r

h = 9 - 3r

volume of frustum = $\dfrac{1}{3}\pi h(r1^2 + r2^2 + r1r2)$

$44 = \dfrac{1}{3} \times \dfrac{22}{7} \times (9 - 3r)(9 + r^2 + 3r)$

$44 = \dfrac{1}{3} \times \dfrac{22}{7} \times 3(3 - r)(r^2 + 3r + 3^2)$

$44 = \dfrac{22}{7}(3 - r)(r^2 + 3r + 3^2)$

$44 = \dfrac{22}{7}(3^3 - r^3)$

$14 = 27 - r^3$

$r^3 = 13$

$r = \sqrt[3]{13}$

Question 59

The ratio of radii of two right circular cylinders is 2 : 3 and their heights are in the ratio 5 : 4. The ratio of their curved surface area is

A 5:6

B 3:4

C 4:5

D 2:3

   Answer: A

Explanation:

ratio of radii of two right circular cylinders r1, r2 is 2 : 3

heights h1,h2 are in the ratio 5 : 4

curved surface area (C S A) = $2\pi rh$

$\frac{CSA1}{CSA2} = \frac{2\pi r1 h1}{2\pi r2 h2} = \frac{r1 h1}{r2 h2} = \frac{2\times 5}{3\times 4} = \frac{5}{6}$

Question 60

A solid cylinder has total surface area of 462 sq. cm. Curved surface area is 1/3 rd of it's total surface area. What is the volume of the cylinder

A 530 cm^3

B 536cm^3

C 539cm^3

D 545cm^3

   Answer: C

Explanation:

curved surface area (C S A) is 1/3 rd of its total surface (T S A) area

C S A = $\frac{TSA}{3}$

$CSA = \frac{462}{3} = 154$

rest of area = 462 - 154 = 308

base area = $2\pi r^2 = 308$

$2 \times \frac{22}{7} \times r^2 = 308$

solving, r = 7

$2\pi rh = 154$

$2 \times \frac{22}{7} \times 7 \times h = 154$

solving h = $\frac{7}{2}$

$volume = \pi r^2 h$

= $\frac{22}{7} \times 7^2 \times \frac{7}{2} = 539$

Question 61

A cylinder and a cone have equal radii of their bases and equal heights. If their curved surface areas are in the ratio 8 : 5, the ratio of their radius and height is

A 1:2

B 1:3

C 2:3

D 3:4

> **Answer:** D

Explanation:

$$\frac{curved\,surface\,area\,of\,cylinder}{curved\,surface\,area\,of\,cone} = \frac{8}{5}$$

$$\frac{2\pi rh}{\pi r\sqrt{h^2}+\sqrt{r^2}} = \frac{8}{5}$$

$$\frac{h}{\sqrt{h^2}+\sqrt{r^2}} = \frac{4}{5}$$

on squaring both sides

$$\frac{h^2}{\sqrt{h^2}+\sqrt{r^2}} = \frac{25}{16}$$

$$1 + \frac{r^2}{h^2} = \frac{25}{16}$$

$$\frac{r^2}{h^2} = \frac{9}{16}$$

$$\frac{r}{h} = \frac{3}{4}$$

Question 62

A solid is hemispherical at the bottom and conical above. If the surface areas of the two parts are equal, then the ratio of radius and height of its conical part is

A 1:3

B 1:1

C $\sqrt{3} : 1$

D $1 : \sqrt{3}$

> **Answer:** D

Explanation:

let the radius of base = r

height of cone = h

$$2\pi r^2 = \pi r\sqrt{r^2} + \sqrt{h^2}$$

$$2r = \sqrt{r^2} + \sqrt{h^2}$$

$$4r^2 = r^2 + h^2$$

$$3r^2 = h^2$$

$$h = \sqrt{3}r$$

$$\frac{r}{h} = \frac{1}{\sqrt{3}}$$

Question 63

Base of a right prism is an equilateral triangle of side 6 cm. If the volume of the prism is 108 $\sqrt{3}$cc. its height is

A 9 cm

B 10 cm

C 11 cm

D 12 cm

Answer: D

Explanation:

area of the base = $\frac{\sqrt{3}}{4} \times side^2$

$= \frac{\sqrt{3}}{4} \times 6 \times 6$

$= 9\sqrt{3}cm^2$

therefore, volume of the prism = $area\,of\,base \times height$

$108\sqrt{3} = 9\sqrt{3} \times h$

solving h = $\frac{108\sqrt{3}}{9\sqrt{3}} = 12$

Question 64

If $a + \frac{1}{a} + 2$ then the value of $a^{37} - \frac{1}{a^{100}}$

A 0

B -2

C 1

D 2

Answer: B

Question 65

The value of k for which the graph of (k -1) x + y - 2 = 0 and (2 - k) x - 3y + 1) = 0 are parallel is

A $\frac{1}{2}$

B $\frac{-1}{2}$

C 2

D -2

Answer: A

Question 66

The length of a shadow of a vertical tower is $\frac{1}{\sqrt{3}}$ times its height. The angle of elevation of the Sun is

A 30°

B 45°

C 60°

D 90°

Answer: C

Explanation:
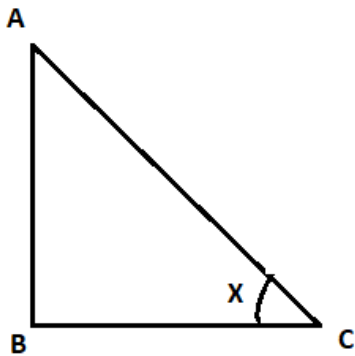
let AB be the tower and BC be its shadow

assume AB = x

then $BC = \dfrac{x}{\sqrt{3}}$

$tan\theta = \dfrac{AB}{BC} = x \times \dfrac{\sqrt{3}}{x} = \sqrt{3}$

$tan\theta = tan60°$

$\theta = 60°$

Question 67

The graph of x + 2y = 3 and 3x - 2y = 1 meet the Y-axis at two points having distance

A $\dfrac{8}{3}$ units

B $\dfrac{4}{3}$ units

C 1 units

D 2 units

Answer: D

Explanation:
on Y axis, x=0

put x = 0 in x+2y = 3

2y = 3

$y = \dfrac{3}{2}$

putting x=0 in 3x-2y = 1

-2y = 1

$\dfrac{-1}{2}$

therefore points on Y-axis are

$(0, \dfrac{3}{2}) and (0, \dfrac{-1}{2})$

required distance = $\sqrt{(0-0)^2} + \sqrt{(\dfrac{3}{2} + \dfrac{1}{2})^2}$

$= \sqrt{(0+4)}$ = 2 units

Question 68

if x+$\frac{1}{16x}$ =1, then the value of $64x3 + \frac{1}{64x^3}$

A 4

B 52

C 64

D 76

Answer: B

Question 69

If a, b, c are three non-zero real numbers such that a + b + c = 0, and b2 ca, then the value of is $\frac{a^2+b^2+a^2}{b^2-ca}$ is

A 3

B 2

C 0

D 1

Answer: B

Question 70

If $a^4 + a^2b^2 + b^4$ =8 and $a^2 + ab + b^2$ = 4, then the value of ab is

A -1

B 0

C 2

D 1

Answer: D

Question 71

If $a = 25, b = 15, c = -10,$ then the value of $\frac{a^3+b^3+c^3-3abc}{(a-b)^2+(b-c)^2+(c-a)^2}$ is

A 30

B -15

C -30

D 15

Answer: D

Question 72

A, B, C are three points on a circle. The tangent at A meets BC produced at T, $BTA = 40°, CAT = 44°$. **The angle subtended by BC at the centre of the circle**

A 84°

B 92°

C 96°

D 104°

Answer: D

Explanation:
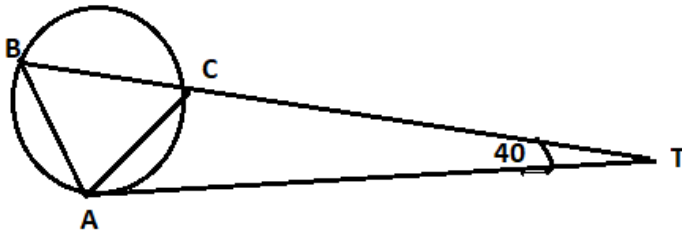
$< CAT = 44°$ (given)

$< BTA = 40°$ (given)

$< ACT = 180 - 44 - 40 = 96°$

$< CAT =< CBA = 44°$ (alternate theorem)

$< BCA = 180 - 96 = 84$

therefore, $< BAC = 180 - 84 - 44 = 52°$

therefore, angle subtended by BC at the centre = $2 \times 52 = 104°$

Question 73

If the length of a chord of a circle at a distance of 12 cm from the centre is 10 cm, then the diameter of the circle is

A 13 cm

B 15 cm

C 26 cm

D 30 cm

Answer: C

Explanation:
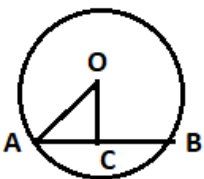
given, OC = 12 cm

AC = CB = 5 cm [line drawn through the centre of a circle bisects a chord]

therefore, radius OA = $\sqrt{OC^2} + \sqrt{AC^2}$

$$= \sqrt{12^2 + \sqrt{5}^2}$$

$$= \sqrt{169} = 13cm$$

diametre = $2 \times 13 = 26$

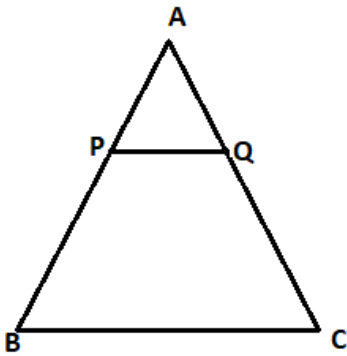## Question 74

In ABC, P and Q are the middle points of the sides AB and AC respectively. R is a point on the segment PQ such that PR : RQ = 1 : 2. If PR= 2 cm. then BC =

A 4 cm

B 2 cm

C 12 cm

D 6 cm

Answer: C

Explanation:

$\frac{PR}{RQ} = \frac{1}{2}$ (given)

PR = 2 cm

$\frac{2}{RQ} = \frac{1}{2}$

solving, RQ = 4 cm

PQ = PR + RQ = 2 + 4 = 6 cm

As the line joining the mid points of 2 sides of a triangle is parallel and half of the third side

therefore, BC = 2PQ = $2 \times 6 = 12cm$

Question 75
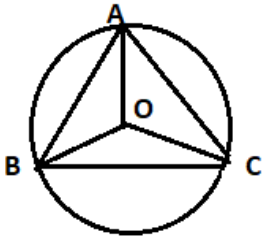
If O is the circumcenter of ABC and $OBC = 35°$, then the BAC is equal to

A 55°

B 110°

C 70°

D 35°

Answer: A

Explanation:

OB = OC = radius of the circle

$< OBC =< OCB = 35°$

$< BOC = 180 - 70 = 110°$

$< BAC = \frac{110}{2} = 55°$ [the angle subtended at the centre by an arc is twice to the angle subtended at the circumference]
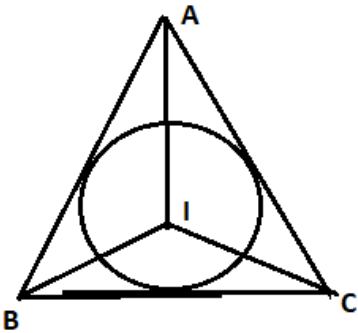
Question 76

If I is the in centre of ABC and BIC = $135°$, then ABC is

A acute angled

B equilateral

C right angled

D obtuse angled

Answer: C

Explanation:

I is the incentre of a triangle

internal bisector of angle of a triangle meet at I

<BIC = 135° (given) ....(1)

$< BIC = 90 + \frac{1}{2}$ <A ....(2) (property of internal bisector)

from (1) and (2)

$135° = 90 + \frac{1}{2} < A$

$45° = \frac{1}{2} < A$

$< A = 90°$

therefore triangle ABC is a right angled triangle

Question 77

If $\sin^2 \alpha + \sin^2 \beta$, then the value of $\cos \frac{\alpha+\beta}{2}$ is

A 1

B -1

C 0

D 0.5

Answer: C

Question 78

The value of $\cot \frac{\pi}{20}\ \cot \frac{3\pi}{20}\ \cot \frac{5\pi}{20}\ \cot \frac{7\pi}{20}\ \cot \frac{9\pi}{20}$ is

A -1

B $\frac{1}{2}$

C 0

D 1

Answer: D

Question 79

If $\sin \theta + \cos \theta = \frac{17}{13}, 0 < \theta < 90°$,then the value of $\sin \theta - \cos \theta$ is

A $\frac{5}{17}$

B $\frac{3}{19}$

C $\frac{7}{10}$

D $\frac{7}{13}$

Answer: D

Question 80

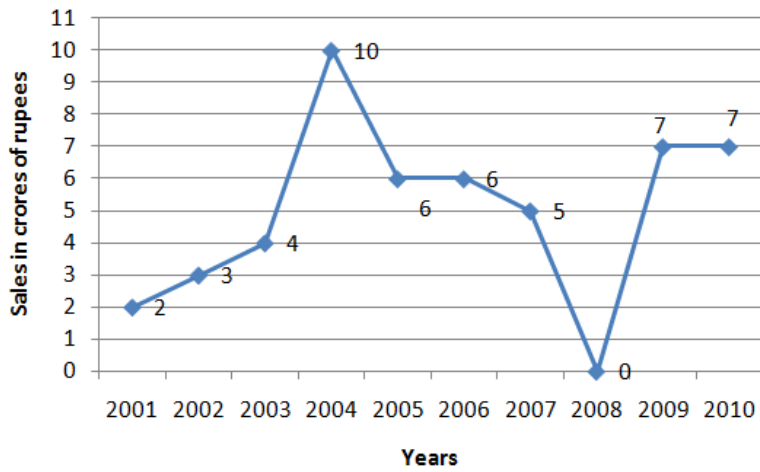If $\tan \theta . \tan 2\theta = 1$, then the value of $\sin^2 2\theta + \tan^2 2\theta$ is equal to

A $\frac{3}{4}$

B $\frac{10}{3}$

C $3\frac{3}{4}$

D 3

Answer: C

Instructions

The following line diagram represents the yearly sales figure of a company in the years 2001 - 1010. Examine the diagram and answer the questions.

Question 81

By what percent did the sales in 2008 decrease in comparison to the sales in 2006?

A 20

B 18

C $16\frac{2}{3}$

D $15\frac{2}{3}$

Answer: C

Question 82

The ratio of sales in 2002 to that in 2007 is

A 2 : 3

B 1 : 3

C 1 : 1

D 3 : 5

Answer: D

Explanation:
ratio of sales in 2002 to that in 2007 = 3 : 5

Question 83

Average sale (in crore of Rs.) of the company during the period 2003 - 2007 is

A 5.8

B 5

C 6.2

D 5.5

Answer: C

Explanation:

Average sale (in crore of Rs.) of the company during the period 2003 - 2007 $= \frac{4+10+6+6+5}{5} = \frac{31}{5} = 6.2$

Question 84

The percentage decrease in sales in the year 2005 with respect to the previous year is

A 80

B 100

C 40

D 150

   Answer: C

Explanation:

percentage decrease in sales in the year 2005 with respect to the previous year $= \frac{10-4}{10} \times 100 = 40$

Question 85

Total sales (in crore of Rs.) from 2005 to 2008 is

A 17

B 27

C 22

D 31

   Answer: A

Explanation:
Total sales (in crore of Rs.) from 2005 to 2008 = 6 + 6 + 5 + 0 =17

Instructions

The following table shows the number of students of 7 college participating in extra curricular activities:

Extra Circular Activities	College						
	A	B	C	D	E	F	G
I	200	300	500	100	400	300	200
II	100	200	200	100	100	100	100
III	65	130	420	75	540	220	153
IV	317	155	438	105	385	280	120

Question 86

The different of the range of number of students in activity IV and the average of number of students in activity III per college is

A 111

B 153

C 104

D 217

Answer: C

Question 87

Percentage of the number of students in activity II to that of IV is

A 37

B 42

C 48

D 50

Answer: D

Explanation:
number of students in activity II = 900

number of students in activity IV = 1800

Percentage of the number of students in activity II to that of IV = $\frac{900}{1800} \times 100 = 50$

Question 88

The college in which minimum number of students participate in extra curricular activities is

A D

B A

C B

D C

Answer: A

Explanation:
number of students participate in college A = 682

number of students participate in college B = 785

number of students participate in college C = 1858

number of students participate in college D = 380

number of students participate in college E = 1425

number of students participate in college F = 900

number of students participate in college G = 573

therefore, college in which minimum number of students participate in extra curricular activities is D

Question 89

The college in which minimum number of students participate inextra curricular activities is

A D

B G

C F

D A

Answer: A

Explanation:
number of students participate in college A = 682

number of students participate in college B = 785

number of students participate in college C = 1858

number of students participate in college D = 380

number of students participate in college E = 1425

number of students participate in college F = 900

number of students participate in college G = 573

therefore, college in which minimum number of students participate inextra curricular activities is D

Question 90

The ratio of total number of students in II and I is

A   1 : 2

B   9 : 20

C   19 : 7

D   21 : 10

Answer: B

Explanation:
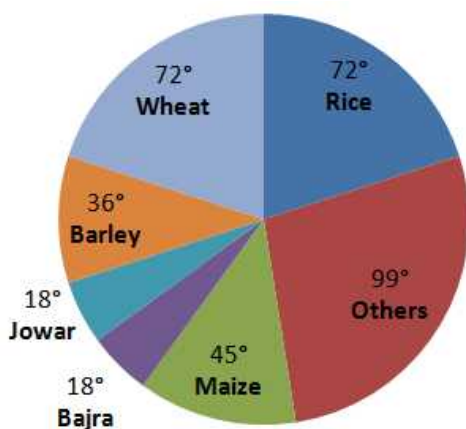total number of students in II = 900

total number of students in I = 2000

ratio = 900 : 2000

= 9 : 20

Instructions

The pie-chart provided below gives the distribution of land (in a village) under various food crops. Study the pie-chart carefully and answer the questions.

Question 91

If the total area under bajra was three hundred acres, then the total area (in hundred acres) under rice and barley togetheris

A   18

B   12

C 15

D 20

   Answer: A

Question 92

The combination of three crops which contribute to more than 50% of the total area under the food crops is

A Wheat, rice and maize

B wheat, rice and jowar

C wheat, rice and bajra

D rice, barley and maize

   Answer: A

Question 93

The ratio of the land used for rice and barley is

A $3 : 1$

B $1 : 2$

C $2 : 1$

D $3 : 2$

   Answer: C

Question 94

If 10% of the land reserved for rice be distributed to wheat and barley in the ratio $2 : 1$, then the angle corresponding to wheat in the new pie-chart will be

A $38.4°$

B $76.8°$

C $75.6°$

D $45.5°$

   Answer: B

Question 95

If the production ofrice is 5 times that of jowar and the production of jowar is 2 times that of bazra,thenthe ratio between the yield per acre ofrice and bazra is
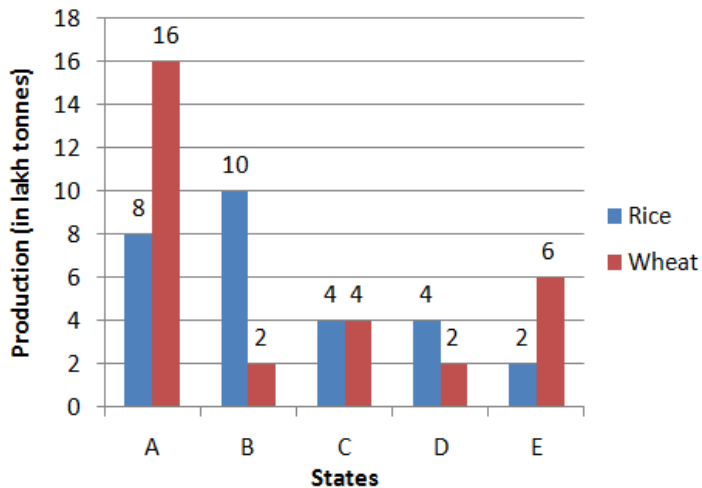
A $5 : 1$

B 3 : 1

C 4 : 1

D 6 : 1

Answer: E

Instructions

The bar graph provided below represents the production of rice and wheat in different states of a country in the certain year. Answer the questions.

Question 96

The total production of rice and wheat in all the mentioned states in minimum in the state

A B

B C

C D

D E

Answer: C

Explanation:
total production of rice and wheat is minimum in state D

In state D total production = 6 lakh tonnes

Question 97

The ratio of total production of rice in the mentioned states to that of wheat in those states, is

A 15 : 16

B 12 : 13

C 13 : 14

D 14 : 15

Answer: D

Explanation:
total production of rice = 28

total production of wheat = 30

ratio of rice : wheat = 28 : 30

= 14 : 15

Question 98

The difference between the production in rice and wheat is maximum in

A A only

B All of A, B and E

C B and E both

D A and B both

Answer: D

Explanation:
difference between the production in rice and wheat for A = 8

B = 8

C= 0

D=2

E=4

Thus maximum for both and B

Question 99

The state which is the largest producer of rice is

A A

B B

C C

D D

Answer: B

Explanation:
state B produced 10 lakh tonnes of rice thus state B is the largest producer of rice

Question 100

The average of production of rice in the mentioned states (in lakh tonnes) is

A 5 : 5

B 5 : 6

C 5 : 7

D 5 : 8

Answer: B