TCS specific Question bank

1. X takes 4 days to complete one-third of a job,Y takes 3 days to complete one-sixth of the same work and Z takes 5 days to complete half the job.If all of them work together for 3 days and X and Z quit, how long will it take for Y to complete the remaining work done.

a. 6 days

b. 7 days

c. 5.1 days

d. 8.1 days

Answer: c
Explanation:

X takes 12 days to complete the full work. Y take 18 days, Z takes 10 days.
3 days work = 3(112+118+110) = 4360
Remaining work = 1−4360=1760
This work should be completed by Y in 1760×18 = 5.1 days

2. Thomas takes 7 days to paint a house completely whereas Raj would require 9 days to paint the same house completely. How many days will take to paint the house if both them work together.(give answers to the nearest integer)?

a. 4

b. 2

c. 5

d. 3

Answer: a
Explanation:
Simple formula = xyx+y = 7×97+9=4

3. One day, Eesha started 30 minutes late from home and reached her office 50 minutes late, while driving 25% slower than her usual speed. How much time in minutes does Eesha usually take to reach her office from home?

a. 20

b. 40

c. 60

d. 80

Answer: c
Explanation:
She got late to the office 20 minutes late as she drove at 3/4 th of the speed.
Given, d34s−ds=20
⇒ ds(43−1)=20
⇒ Time=ds=60

4. Curious Elva asked her father what he would gift for her nineteenth birthday. Father replied that it would depend on the day of the week and be one of SUNglasses, MONeybag, ..., FRIedcake, and SATchel. Please help Elva find the day of the week on 08-Jan-2029

a. Monday

b. Tuesday

c. Thursday

d. Saturday

Answer: a
Explanation:
Number of odd days upto 2000 = 0
From 2001 to 2028 = 28 + 7 = 35 = 0 (∵ 35/7 remainder zero)
From 2019 January 1 to 7 = 7 = 0
So 08 - Jan - 2029 falls on the same week day as 1-1-1 which is Monday.

5. All even numbers from 2 to 98 inclusive, except those ending 0, are multiplied together. What is the rightmost digit (the units digit) of the product?

a. 6
b. 2
c. 0
d. 4

Answer: a
Explanation:
$\underline{2 \times 4 \times 6 \times 8} \times 12 \times 14 \times \ldots\ldots \times 98$
Now units digit of $2 \times 4 \times 6 \times 8 = 4$
Also $12 \times 14 \times 16 \times 18$ also 4. So on
Total 10 times 4 occurs in the units digit = $4^{10}=6$

6. In 2003, there are 28 days in February and there are 365 days in the year. In 2004, there are 29 days in February and there are 366 days in the year. If the date March 11, 2003 is Tuesday, then which on of the following would the date March 11, 2004 be?

a. Monday
b. Thursday
c. Wednesday
d. Tuesday

Answer: b
Explanation:
March 11, 2003 is Tuesday. So March 11, 2004 weekday will be 2 days after Tuesday. i.e., Thursday.

7. 8 year old Eesha visited her grandpa. He gave her this riddle.
I started working at 13. I spent 1/6 of my working life in a factory. I spent 1/4 of my working life in an office, and I spent 1/4 of my working life as a school caretaker. For the last 32 years of my working life I've been doing social service. How old am I?

a. 109
b. 102
c. 105
d. 113

Answer: a
Explanation:
Let x be the number of years he worked. $\Rightarrow x6+x4+x4+32=x$
$\Rightarrow x=96$
His age = 96 + 13 = 109

TCS specific Question bank

8. 100 students appeared for two examinations. 60 passed the first, 50 passed the second and 30 passed both. Find the probability that a student selected at random has failed in both the examinations?

a. 1/5

b. 5/6

c. 1/7

d. 5/7

Answer: a

Explanation:

$n(A \cup B) = n(A) + n(B) - n(A \cap B)$ $n(A \cup B) = 60 + 50 - 30 = 80$

So 80 passed in atleast one of the exams. 100 - 80 = 20 failed in both.

Probability = 20/100 = 1/5

9. What is the greatest power of 143 which can divide 125! exactly

a. 12

b. 11

c. 8

d. 9

Answer: d

Explanation:

143 = 11 × 13. So highest power of 13 should be considered in 125!.

Highest power of 11 in 125! is 12 but highest power of 13 is only 9. That means, 125!=1112×139×....

So only nine 13's are available. So we can form only nine 143's in 125!. So maximum power of 143 is 9.

10. Three containers A, B and C are having mixtures of milk and water in the ratio of 1:5, 3:5, 5:7 respectively. If the capacities of the containers are in the ratio 5:4:5, find the ratio of milk to water, if all the three containers are mixed together.

a. 53:115

b. 53:113

c. 54:115

d. 54:113

Answer: a

Explanation:

Weighted average rule can be applied = 5×16+4×38+5×5125+4+5 = 53168

So milk and water concentration = 53 : (168 - 53) = 53 : 115

1. How many of the numbers x (x being integer) with 10<= x<= 99 are 18 more than the sum of their digits

a. 9

b. 12

c. 18

d. 10

Answer: d

Explanation:

Let the number be ab. So given that ⇒10a + b = 18 + a + b

⇒9a = 18 ⇒a = 2

So 20, 21, ... upto 29 there are total 10 numbers possible.

2. Apples cost L rupees per kilogram for the first 30 kilograms and Q per kilogram for each additional kilogram. If the price paid for 33 kilograms of Apples is Rs.1167 and for 36 kilograms of apples if Rs.1284, then the cost of the first 10 kgs of apples is:

a. Rs.117
b. Rs.350
c. Rs.281
d. Rs.1053

Answer: b

Explanation:

Given that

30L + 3Q = 1167

30L + 6Q = 1284

Solving we get Q = 39, L = 35

So cost of first 10 kgs of apples = 35 × 10 = 350

3. A conical tent is to accommodate 10 persons. Each person must have 6 sq.meter space to sit and 30 cubic meter of air to breathe. What will be the height of the cone?

a. 150m
b. 37.5 m
c. 15 m d.
75 m

Answer: c

Explanation:

Each person needs 6 sq meter of space. So ⇒ πr2=6×10=60

⇒ πr2 = 60

Total volume of the tent = 30 × 10 = 300 So 13πr2h=300

⇒ 13×60×h=300 ⇒h = 15 m

4. George and Mark can paint 720 boxes in 20 days, Mark and Harry in 24 days and Harry and George in 15 days. George works for 4 days, Mark for 8 days and Harry for 8 days. The total number of boxes painted by them is a. 252

b. 516
c. 348
d. 492

Answer: c

Explanation:
Capacities of these people as followes
G + M = 720/20 = 36
M + H = 720/24 = 30
H + G = 720/15 = 48
Adding all above we get 2(G + M + H) = 114 ⇒ G + M + H = 114/2 = 57
Now individual capacities are given below
G = 27 ; M = 9; H = 21
So 27 × 4 + 9 × 8 + 21 × 8 = 348

5. University of Vikramsila has enrolled nine PhD candidates. Babu, Chitra, Dheeraj , Eesha, Farooq,Gowri , Hameed, Iqbal, Jacob.

-Farooq and Iqbal were enrolled on the same day as each other, and no one else was enrolled that day. -Chitra and gowri were enrolled on the same day as each other, and no one else was enrolled that day. -On each of the other days of hiring , exactly one candidate was enrolled.

-Eesha was enrolled before Babu. -
Hameed was enrolled before Dheeraj

-Dheeraj was enrolled after Iqbal but before
Eesha -Gowri was enrolled after both Jacob and
Babu -Babu was enrolled before Jacob

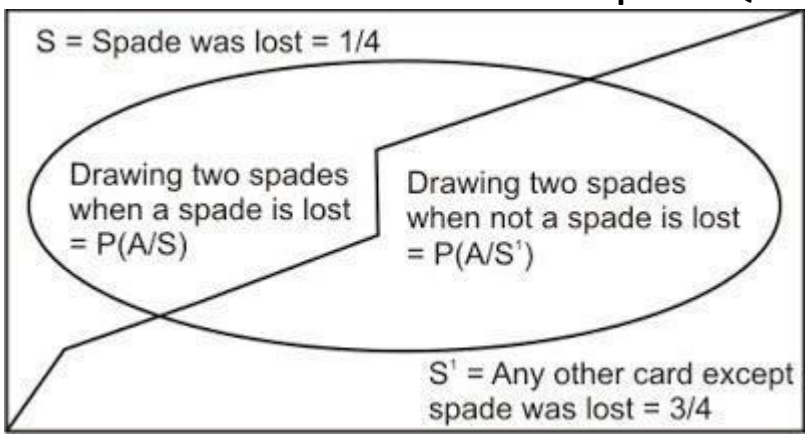
Who were the last two candidates to be enrolled?
a. Babu and Gowri

b. Eesha and Jacob
c. Babu and Chitra
d. Gowri and Chitra
Answer: d
Explanation: Given
that
1. Easha < Babu
2. Hameed < Dheeraj
3. Iqbal < Dheeraj < Easha
4. Jacob/Babu < Gowri
5. Babu < Jacob

from 1 and 5, Easha was before Babu and Jacob so she cannot be in the last two. Option B ruled out
from 4 and 5, babu is before Jacob and Gowri so he cannot be in the last two. Options a, c ruled out.
So option d is correct.

6. A card from a pack of 52 cards is lost. From the remaining cards of the pack, two cards are drawn and are found to be both spade. Find the probability of the lost card being a spade.

a. 10/50
b. 10/53
c. 11/50
d. 11/53
Answer:
Explanation:



Let S and S1 be the respective events of choosing a spade and a card which is not spade. Let A denote drawing two spades. Out of 52 cards, 13 are spade and 39 cards are not spade.

P(S) = 13/52 = 1/4

P(S1) = 39/52 = 3/4

We first calculate the total probability of drawing two spades when the missing card is a spade and the missing card is not a spade.

Total probability = P(A) = P(S∩A)+P(S1∩A) = P(S).P(AS)+P(S1).P(AS1)

When one spade is lost, there are 12 spades out of 51 cards. Two cards can be drawn out of 12 spade cards in 12C2 ways. Similarly, 2 cards can be drawn out of 51 cards in 51C2 ways.

Probability of drawing 2 spades when one spade is lost = 12C251C2 = 22425

P(S∩A)=P(S).P(AS) = 14×22425

When the lost card is not spade, there are 13 spades out of 51 cards. Two cards can be drawn out of 13 spades in13C2 ways whereas 2 cards can be drawn out of 51 cards in 51C2 ways.

The probability of getting two cards, when one card is lost which is not spade, is given by
P(AS1) P(AS1) = 13C251C2 = 26425

P(S1∩A)=P(S1).P(AS1) = 34×26425

The probability that the lost card is spade given that two spades are drawn = P(SA) = P(S∩A)P(A)
= P(S).P(A/S)P(S).P(A/S)+P(S1).P(A/S1) = 1/4×22/4251/4×22/425+3/4×26/425 = 11/50

7. There are two bags containing white and black balls. In the first bag there are 8 white and 6 black balls and in the second bag, there are 4 white and 7 black balls. One ball is drawn at random from any of these two bags. Find the probability of this ball being black.

a. 21/154

b. 7/54

c. 21/77

d. 41/77

Answer: Explanation: Probability = 12×6C114C1+12×7C111C1 = 4177

TCS specific Question bank

8. A bag contains 1100 tickets numbered 1, 2, 3, ... 1100. If a ticket is drawn out of it at random, what is the probability that the ticket drawn has the digit 2 appearing on it?

a. 291/1100
b. 292/1100
c. 290/1100
d. 301/1100

Answer: c

Explanation:

Numbers which dont have 2 from 1 to 9 = 8
Numbers which dont have 2 from 10 to 99:

Let us take two places _ _. Now left most place is fixed in 8 ways. Units place is filled with 9 ways. Total 72 numbres.

Numbers which dont have 2 from 100 to 999 =_ _ _ = 8 × 9 × 9 = 648
Numbers which dont have 2 from 1000 to 1099 =10_ _ = 9 × 9 = 81
Finally 1100 does not have 2. So 1.

Total number with no 2 in them = 8 + 72 + 648 + 81 + 1= 810
Tickets with 2 in them = 1100 - 810 = 290
Required probability = 290 / 1100

9. In how many ways a team of 11 must be selected a team 5 men and 11 women such that the team must comprise of not more than 3 men.

a) 1565
b) 2256 c)
2456 d)
1243

Answer: b

Explanation:

Maximum 3 men can be played which means there can be 0, 1, 2, 3 men in the team. (5C0×11C11)+(5C1×11C10) + (5C2×11C9)+(5C3×11C8) = 2256

TCS specific Question bank

TCS -22

. problemsolvingproblemsolvingprob . . . . . Find the 2015th term in the series?

Sol.

Problemsolving = 14 letter word. So divide 2015 by 14 and find the remainder. Here remainder is 13. so 13th letter in problemsolving is 'n'

2. 4 men can check exam papers in 8 days working 5 hours regularly. What is the total hours when 2 men will check the double of the papers in 20 days?

Sol.

Let a man can do 1 unit of work in 1 hour.
Total units of work = 4 x 8 x 5 = 160 units.
Now work = 2 x 160 = 320 units.

Now 2 men work for 20 days. Let in x hours they have to work per day. Now total work = 2×x×20 = 40 x
40x = 320 So x = 320/40 = 8 hours.

3. X = 1011021031041051061 07.....146147148149150 (From numbers 101-150). Find out the remainder when this number is divided by 9.

Sol:

The divisibility rule for 9 is sum of the digits is to be divisible by 9. So

We calculate separately, sum of the digits in hundreds place, tenths place, and units place.

Sum of the digits in hundreds place: 1 x 50 = 50

Sum of the digits in tenths place : 0 x 9 + 1 x 10 + 2 x 10 + 3 x 10 + 4 x 10 + 5 x 1 = 105

Sum of the digits in units place : (1 + 2 + 3 + ...+ 9) x 5 = 225

So total = 380

So remainder = 380 / 9 = 2

4. A number is 101102103104...150. As 101 102 103 103.... 150. What is reminder when divided by 3?

Sol. Divisibility rule for 3 also same as 9. so from the above discussion sum of the digits = 380 and remainder = 380/3 = 2.

5. In 4 years, Raj's father age twice as raj, Two years ago, Raj's mother's age twice as raj. If Raj is 32yrs old in eight yrs from now, what is the age of Raj's mother and father?

Sol. Raj present age = 32 - 8 = 24.
After 4 years Raj's age is 28. and Raj's fathers age is 28 x 2 = 56, and his present age is 52.
Two years ago, Raj's age is 22. and his mother's age is 22 x 2 = 44. His mother's present age = 46

6. 7^1+7^2+7^3+.....+7^205. Find out how many numbers present which unit place contain 3?

Sol. Units digits of first 4 terms are 7, 9, 3, 1. and this pattern repeats. So for every 4 terms we get one term with 3 in its unit digit. So there are total of 205/4 = 51 sets and each set contains one terms with 3 in its unit digit. Ans is 51.

TCS specific Question bank

7. In paper A, one student got 18 out of 70 and in paper B he got 14 out of 30. In which paper he did fare well?
Sol. Find the percentages. Paper A = 18/70 x 100 = 25.7
Paper B = 14/30 x 100 = 46.6

8. Find the total no of divisors of 1728 (including 1 and 1728)
Sol. Direct formula from our lesson on factors. Click Here.
The number of factors or divisors of a number N=ap.bq.cr... = (p+1).(q+1).(r+1)... where a, b, c ... prime numbers.
1728 = 26×33
So total number of divisors = (6 + 1).(3 + 1) = 28

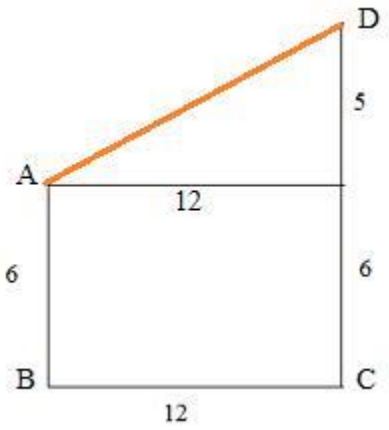
9. The sum of two numbers is 45. Sum of their quotient and reciprocal is 2.05, Find the product of the numbers. Sol: Let a, b be the numbers.
a + b = 45
ab+ba = 2.05
⇒a2+b2ab = 2.05
⇒(a+b)2−2abab=2.05
⇒(a+b)2 = 2.05ab + 2ab = 4.05ab ⇒ ab = 4524.05 = 500

10. A number is divided by 406 leaves remainder 115 , What will be the reminder when it will be divided by 29?
Sol. Let the number be N.
So N = 406x + 115.
Now divide this number by 29. As 406 is exactly divisible by 29, we have to divide 115 by 29 and find the remainder. So remainder = 28

11. (p/q-q/p)=21/10. Then find 4p/q+4q/p?
sol.
Let p/q = a, then (a - 1/a) = 21/10
⇒a2−1=a.2110 ⇒10a2−21a−10 = 0
Roots of the equation = −b±b2−4ac−−−−−−−√2a
a = 21±441+400−−−−−−−−√20
a = 21±2920 = 5/2 or -2/5 For
a = 5/2, 4p/q+4q/p = 58/5
For a = -2/5, 4p/q+4q/p = -58/5

12. Two vertical ladders length of 6 m and 11 m are kept vertically at a distance of 12 m. Find the top distance of both ladders?
Sol:

TCS specific Question bank

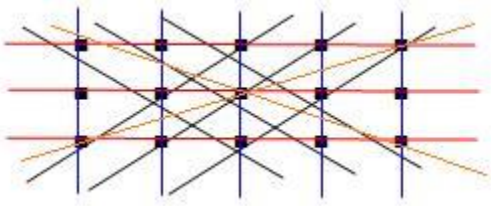


So distance between the top points = AD = 122+52−−−−−−−√=13
So in paper B he did well.

Updated:

13.

Here is 15 dots. If you select 3 dots randomly, what is the probability that 3 dots make a triangle?
a. 440/455
b. 434/455
c. 449/455
d. 438/455
Sol.



I think there seem some problem with this question. Total ways of selecting 3 dots out of 15 is 15C3 = 455 If 3 dots are collinear then triangle may not be formed. Now look at the above diagram. If we select any 3 dots from the red lines they may not form a triangle. They are 3 x 5C3 = 30. If we select the three letters from blue lines, they may not form a triangle. They are in total 5 ways. Also there are 6 others lines which don't form a triangle. Also another two orange lines. Total = 30 + 5 + 6 + 2 = 43. So we can form a triangle in 455 - 43 = 412. So answer could be 412/455.

14. In a series of numbers , the next number is formed by adding 1 to the sum of the previous numbers, and the 10th number is 1280. Then what is the first number in the series? (series will be like this x , x+1, (x+(x+1))+1,.....)

a. 1

b. 4

c. 5

d. None of these

Answer: Option B

Sol.

The given series is x, x + 1, 2x + 2, 4x + 4 .....

If you observe the pattern here, the coefficient of x + 1 is in the powers of 2. So 4th term has a power of 2, 5th term has a power of 3... 10th term has a power of 8. So tenth term would be 28(x + 1)

= 256(x+1).

Given 256(x+1) = 1280

x = 4.

15. The number of multiples of 10 which are less than 1000, which can be written as a sum of four consecutive integers is

a. 50

b.100

c. 150

d. 216

Answer: Option A

Sol:

We can write 10 = 1 + 2 + 3 + 4. So we have to find how many multiples of 10 can be written in this manner.
Let the first of the four numbers be n. So

n + (n+1) + (n+2) + (n+3) = 10k

4n + 6 = 10k

2n + 3 = 5k

n = 5k−32 = 2k – 1 + k–12

So n is intezer for k = an odd number. So for k = 1, 3, 5, ... 99 we can write a number as a sum of four consecutive intezers.

So there are 50 numbers.

16. Mr. Bean chooses a number and he keeps on doubling the number followed by subtracting one from it, if he chooses 3 as initial number and he repeats the operation for 30 times then what is the final result?

a. (2^30) – 1

b. (2^30) – 2

c. (2^31) – 1

d. (2^31) – 2

Ans: No option

Sol:

Step 1: (3 x 2) - 1 = 5 (2^2 + 1)

Step 2: (5 x 2) - 1 = 9 (2^3 + 1)

Step 3: (9 x 2) - 1 = 17 (2^4 + 1)

Step 4: (17 x 2) - 1 = 33 (2^5 + 1)

So After 30 steps we have 2^31 + 1

17. Tony alone can paint a wall in 7 days and his friend Roy alone can paint the same wall in 9 days. In how many days they can paint the wall working together? Round off the answer to the nearest integer.

a. 3

b. 4

c. 5

d. 7

Answer: Option B

Sol. use formula (xy / x+y)

So nearest value for 3.93 = 4

18. In this question, A^B means A raised to the power B. Let f(X)=1+X+x^2+....x^6. The remainder when f(X^7) is divided by f(X) is

a. 0

b. 6

c. 7

d. None of the other 3 choices.

Answer: C

Explanation:

Given that f(x7)=1+x7+(x7)2 + ...+ (x7)6 = 1+x7+x14+....+x42

We will rewrite the above equation, f(x7)=1+(x7−1)+(x14−1)+... + (x42−1)+6

We know that x7−1=(x−1)(x6+x5+...1)

(∵ xn−an = (x−a).(xn−1+xn−2.a+xn−3.a2.....+an−1) Now it is clear that x7−1 is exactly divisible by f(x).
Also x14−1=(x7)2−12 and x7−1 is a factor of this expression. (∵xn−an is always divisible by x−a

Similarly, we write x21−1=(x7)3−13, x28−1=(x7)4−14....

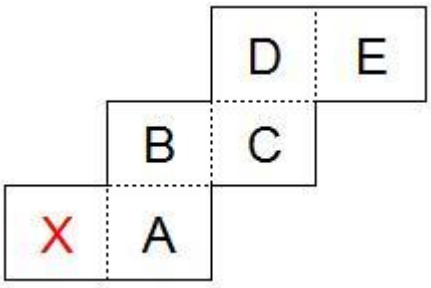
So remainder = 1 + 6 = 7

(If you like the above solution, like our page and +1 it)

TCS specific Question bank

TCS-21

1. The figure shown can be folded into the shape of a cube. In the resulting cube, which of the lettered faces is opposite the face marked x?



a. c
b. a
c. d
d. b
Ans: a
Explanation: If you fold the above picture at the dotted lines, X and C are opposite to each other.

2. In how many ways a team of 11 must be selected from 5 men and 11 women such that the team must comprise of not more than 3 men?

a. 1565
b. 1243
c. 2256
d. 2456
Ans: C
Explanation;
The team may consist of 0 men + 11 women, 1 men + 10 women, 2 men + 9 women, or 3 men + 8 women.
So Number of ways are = $^{11}C_{11}+{}^{5}C_{1}\times{}^{11}C_{10}+{}^{5}C_{2}\times{}^{11}C_{9}+{}^{5}C_{3}\times{}^{11}C_{8} = 2256$

3. Given that $0 < a < b < c < d$, which of the following the largest ?

a.(c+d) / (a+b)
b.(a+d) / (b+c)
c.(b+c) / (a+d)
d.(b+d) / (a+c)
Sol: A
Explanation: Take a = 1, b = 2, c = 3, d = 4. option A is clearly true.

4. Eesha bought 18 sharpeners for Rs.100. She paid 1 rupee more for each white sharpener than for each brown sharpener. What is the price of a white sharpener and how many white sharpener did she buy ?

a. Rs.5, 10
b. Rs.6, 10

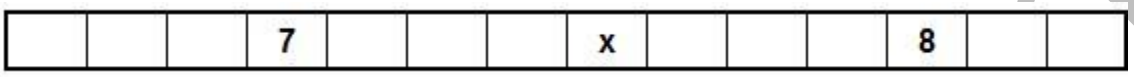
c. Rs.5, 8

d. Rs.6, 8

Sol: B

Explanation: Just check the options. If she bought 10 white sharpeners at Rs.6 per piece, She has spent Rs.60 already. And with the remaining Rs.40, she bought 8 brown sharpeners at 40/8 = Rs.5 which is Rs.1 less than White sharpener.

5.



The fourteen digits of a credit card are to be written in the boxes shown above. If the sum of every three consecutive digits is 18, then the value of x is :

a. 3

b. cannot be determined from the given information.

c. 2

d. 1

Sol : A

Explanation:

Let us assume right most two squares are a , b

Then Sum of all the squares = 18 x 4 + a + b .....
(1) Also Sum of the squares before 7 = 18

Sum of the squares between 7, x = 18 and
sum of the squares between x , 8 = 18

So Sum of the 14 squares = 18 + 7 + 18 + x + 18 + 8 + a + b (2)
Equating 1 and 2 we get x = 3

6. Four people each roll a four die once. Find the probability that at least two people will roll the same number ?

a. 5/18

b. 13/18

c. None of the given choices

d. 1295/1296

Sol: B

Explanation:

The number of ways of rolling a dice where no two numbers probability that no one rolls the same number = 6 x 5 x 4 x 3

Now total possibilities of rolling a dice = 64

The probability that a no one gets the same number = $6\times5\times4\times364=518$

So the probability that at least two people gets same number = $1-518=1318$

7. Jake can dig a well in 16 days. Paul can dig the same well in 24 days. Jake, Paul and Hari together dig the well

in 8 days. Hari alone can dig the well in

a. 96 days

b. 48 days

c. 32 days

d. 24 days

Sol:

Explanation: Simple one. Let the total work to be done is 48 meters. Now Jake can dig 3 mts, Paul can dig 2 mts a day. Now all of them combined dug in 8 days so per day they dug 48/8 = 6 mts. So Of these 8 mts, Hari capacity is 1 mt.

So he takes 48 /1 = 48 days to complete the digging job.

Updated :

8. Eesha bought 18 sharpeners for Rs.100. She paid 1 rupee more for each white sharpener than for each brown sharpener. What is the price of a white sharpener and how many white sharpener did she buy ?

a. Rs.5, 10

b. Rs.6, 10

c. Rs.5, 8

d. Rs.6, 8

Ans:

Explanation: This question can be solved easily by going through options.

A. White sharpener total cost: Rs.5 x 10 = Rs.50. Brown sharpeners cost = Rs.4 x 8 = 32. Total cost is only Rs.82. Wrong option.

B. White sharpener total cost: Rs.6 x 10 = Rs.60. Brown sharpeners cost = Rs.5 x 8 = 40. Total cost is Rs.100. Correct option.

9. The sum of the digits of a three digit number is 17, and the sum of the squares of its digits is 109. If we subtract 495 from the number, we shall get a number consisting of the same digits written in the reverse order. Find the number.

a. 773

b. 683

c. 944

d. 863

Ans: D

Explanation: Check options. Sum of the squares should be equal to 109. Only Options B and D satisfying. When we subtract 495, only 863 becomes 368.

10. Mark told John "If you give me half your money I will have Rs.75. John said, "if you give me one third of your money, I will have Rs.75/- How much money did John have ?

a. 45

b. 60

c. 48

d. 37.5

Ans: B

Explanation: Let the money with Mark and John are M and J respectively.
Now

M + J/2 = 75
M/3 + J = 75

Solving we get M = 45, and J = 60.

11. Eesha has a wheat business. She purchases wheat from a local wholesaler of a particular cost per pound. The price of the wheat of her stores is $3 per kg. Her faulty spring balance reads 0.9 kg for a KG. Also in the festival season, she gives a 10% discount on the wheat. She found that she made neither a profit nor a loss in the festival season. At what price did Eesha purchase the wheat from the wholesaler ?

a. 3 b.

2.5 c.

2.43

d. 2.7

Ans: C

Explanation: Faulty spring balance reads 0.9 kg for a kg" means that she sells 1 kg for the price of 0.9 kgs, so she looses 10% of the price because of the faulty spring balance. She looses another 10% because of the discount. So, she actually sells 1 kg for $3×0.9×0.9=$2.43 and since at that price she made neither a profit nor a loss, then Eesha purchase the wheat from the wholesaler for $2.43.

12. Raj goes to market to buy oranges. If he can bargain and reduce the price per orange by Rs.2, he can buy 30 oranges instead of 20 oranges with the money he has. How much money does he have ?

a. Rs.100

b. Rs.50

c. Rs.150

d. Rs.120

Ans: D

Explanation: Let the money with Raj is M. So M20−M30=2. Check options. Option D satisfies.

13. A city in the US has a basketball league with three basketball teams, the Aziecs, the Braves and the Celtics. A sports writer notices that the tallest player of the Aziecs is shorter than the shortest player of the Braves. The shortest of the Celtics is shorter than the shortest of the Aziecs, while the tallest of the Braves is shorter than the tallest of the Celtics. The tallest of the Braves is taller than the tallest of the Aziecs.
Which of the following can be judged with certainty ?

TCS specific Question bank

X) Paul, a Brave is taller than David, an Aziec

Y) David, a Celtic, is shorter than Edward, an Aziec

a. Both X and Y

b. X only

c. Y only

d. Neither X nor Y Ans: B

Sol: We solve this problem by taking numbers. Let the shortest of Braves is 4 feet. Then tallest of Aziecs is less than 4. So let it be 3 feet.

A -> 2 - 3

B -> 4 - 6

C -> 1 - 7

From the above we can safely conclude X is correct. but Y cannot be determined.

14. There are 3 classes having 20, 24 and 30 students respectively having average marks in an examination as 20,25 and 30 respectively. The three classes are represented by A, B and C and you have the following information about the three classes.

a. In class A highest score is 22 and lowest score is 18

b. In class B highest score is 31 and lowest score is 23

c. In class C highest score is 33 and lowest score is 26.

If five students are transferred from A to B, what can be said about the average score of A; and what will happen to the average score of C in a transfer of 5 students from B to C ?

a. definite decrease in both cases

b. can't be determined in both cases

c. definite increase in both cases

d. will remain constant in both cases

Ans: B

Explanation:

Class A average is 20. And their range is 18 to 22

Class B average is 25. And their range is 23 to 31

Class A average is 30. And their range is 26 to 33

If 5 students transferred from A to B, A's average cannot be determined but B's average comes down as the highest score of A is less than lowest score of B.

If 5 students transferred from B to C, C's average cannot be determined the B's range fo marks and C's range of marks are overlapping.

TCS specific Question bank

15. The value of a scooter depreciates in such a way that its value of the end of each year is 3/4 of its value of the beginning of the same year. If the initial value of the scooter is Rs.40,000, what is the value at the end of 3 years ?

a. Rs.13435
b. Rs.23125
c. Rs.19000
d. Rs.16875

Ans: D

Explanation: 40,000(34)3=16875

16. Rajiv can do a piece of work in 10 days , Venky in 12 days and Ravi in 15 days. They all start the work together, but Rajiv leaves after 2 days and Venky leaves 3 days before the work is completed. In how many days is the work completed ?

a. 5 b.
6 c. 9
d. 7

Ans: D

Explanation: Let the work be 60 units. If venky leave 3 days before the work, Last 3 days must be worked by Ravi. So the remaining days of work be x days, total days to complete the work be x + 3 days.

Now Capacities of Rajiv is 60/10 = 6, Venky is 5, Ravi is 4.
(6 + 5 + 4) 2 + (5 + 4) (x – 3) + 4 x 3 = 60.

30 + 9x – 27 + 12 = 60
9x – 15 =30

9x = 45
x = 5

So total days to complete the work = 2 + 5 = 7 days.

17. A man has a job, which requires him to work 8 straight days and rest on the ninth day. If he started work on Monday, find the day of the week on which he gets his 12th rest day.

a. Thursday b.
Wednesday c.
Tuesday
d. Friday

Ans: B

Explanation:

He works for 8 days and takes rest on the 9th day. So On the 12th rest day, there are 9 x 12 = 108 days passed. Number of odd days = (108 - 1) / 7 = 107 / 7 = 2. So the 12th rest day is wednesday.

TCS specific Question bank

18. On a 26 question test, five points were deducted for each wrong answer and eight points were added for each correct answer. If all the questions were answered, how many were correct, if the score was zero ?

a. 10

b. 12

c. 11

d. 13

Ans: A

Explanation:

Take options and check. If 10 are correct, his score is 10 x 8 = 80. But 16 are wrong. So total negative marking is 16 x 5 = 80. So final score is zero.

TCS specific Question bank

1. 2ab5 is a four digit number divisible by 25. If a number formed from the two digits ab is a multiple of 13, then ab is

a. 52
b. 45
c.10
d.25

Sol: For a number to be divisible by 25, last two digits of that number should be divisible by 25. So b must be either 2 or 7
it is given that ab must be divisible by 13 and in the options only 52 is divisible by 13.

2. The average temperature of Tuesday Wednesday and Thursday was 37 C. The average temperature of Wednesday and Thursday and Friday was 38 C. if the temperature on Friday was 39 C.
Find the temperature on Tuesday.

a. 37.33
b. 38.33
c. 36
d. None of the above

Sol:

(Tues + Wed + Thurs)/3=37
Tues + Wed + Thurs=111...(1)
(Wed + Thurs + Fri)/3=38
(Wed + Thurs + Fri) =114...(2)
Given friday is 39.

Then, (2) - (1) Fri - Tues = 3
So 39 - Tues = 3
Tuesday =36

3. There are 5 boxes in a cargo. The weight of the 1st box is 200 KG, the weight of the 2nd box is 20% higher than the third box, whose weight is 25% higher than the 1st box weight. The 4th box which weighs 350 KG is 30% lighter than the 5th box. Find the difference in average weight of the 4 heaviest boxes and the four lightest boxes. Sol: weight of 1st box=200

weight of 3rd box=(125/100)*200=250
weight of 2nd box=(120/100)*250=300
weight of 4th box =350
weight of 5th box=(10/7)*350=500

average of 4 highest weighted boxes=(500+350+300+250)/4=350
average of 4 lightest boxes=(350+300+250+200)/4=275 therefore
difference=350-275=75

4. The length, breadth and height of a room are in the ratio 3:2:1. If the breadth and height are halved, while the length is doubled. Then the total area of the 4 walls of the room will be decreased by

a. 30%
b. 18.75%

c. 15%

d. 13.6%

Sol: Given l:b:h=3:2:1

let h=10, b = 20, and l = 30

area = 2(l+b)h

area= 2*(3x+2x)*x = 2(30+20)10=1000

Now after those adjustments in the measurements,

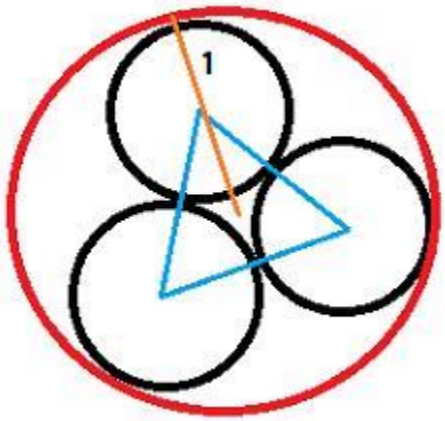
l=60, b=10, h=5

area= 2(l+b)h = 2(60+10)5=700

Percentage decrease= 1000−7001000×1000=30%

5. A circle circumscribes three unit circles that touch each other. What is the area of the larger circle? Note that p is the ratio of the circumference to the diameter of a circle (3.14159265).

Sol:



By joining centers of 3 unit circles we will get an equilateral triangle of length 2 unit. We have to find the length of the orange line.

And center of the equilateral triangle will be the center of the big circle.

So radius of the big circle will be = (1 + Circum radius of the equilateral triagle)

Formula for Circul radius of the equilateral triangle = 23×(3√2a) here 3√2a is the height of the triangle. a is the side of the triangle

Circum radius of equilateral triangle = 23×3√2×2=23√

Area of big circle will be =πr2=3.14×(1+23√)2 = 3.14×(1+43√+43)

=3.14×(1+43√+43) = 3.14×(73+43√)

=3.14×(7+43√3)

6. Rajesh calculated his average over the last 24 tests and found it to be 76. He finds out that the marks for three tests have been inverted by mistake. The correct marks for these tests are 87, 79 and 98. What is the approximate percentage difference between his actual average and his incorrect average?

Sol: No Change

Incorrect value is: 78, 97, 89

correct values are: 87, 79, 98

difference between correct and incorrect value is= 9 + 9 -18=0

7. Joke is faster than Paul, Joke and Paul each walk 24 KM. The sum of their speed is 7 Km per hour. And the sum of times taken by them is 14 hours. Then, Joke speed is

a. 3 KM/Hr

b. 4 KM/Hr

c. 5 KM/Hr

d.7 KM/Hr

Sol:

Speed=DistanceTime

let the speed of joke x then speed of paul will be 7-x

24x+247−x=14

Try to plugin the values from the options. If Joke speed is 4 the paul is 3.

8. The crew of a rowing team of 8 members is to be chosen from 12 men (M1, M2, …., M12) and 8 women (W1, W2,…., W8), such that there are two rows, each row occupying one the two sides of the boat and that each side must have 4 members including at least one women. Further it is also known W1 and M7 must be selected for one of its sides while M2, M3 and M10 must be selected for other side. What is the number of ways in which rowing team can be arranged.

SoL:

We need two person for one side and 1 women for the another side. We select that women in 7 ways. Now that second side people can sit in 7x4! ways.

Now for the first side we need two people from the remaining 14. So this can be done in 14C2 ways and this side people can sit in 4C2×4! ways.

Again the first group may take any of the two sides. So total ways are 2×7×4!×14C2×4!

9. In a certain city, 60% of the registered voters are congress supporters and the rest are BJP supporters. In an assembly election, if 75% of the registered congress supporters and 20% of the registered BJP supporters are expected to vote for candidate A, what percent of the registered voters are expected to vote for candidate A?

Sol: let the people in the city be 100

Congress supporters = 60% of 100 = 60 40% are BJP=40% of 100 = 40

out of 60,75% voted for congress=75%(60)=45

out of 40%,20% voted for congress=20%(40)=8 Total=45 + 8 = 53

Total percent= 53%

10. Anusha, Banu and Esha run a running race of 100 meters. Anusha is the fastest followed by Banu and then

Esha. Anusha, Banu and Esha maintain constant speeds during the entire race. When Anusha reached the goal post, Banu was 10m behind. When Banu reached the goal post Esha was 10m behind. How far was behind Anusha when the latter reached the goal post.

option

a) 70

b) 81

c) 90

d) 80

Sol:

By that time Anusha covered 100m, Bhanu covered 90m. So ratio of their speeds = 10 : 9 By that time Bhanu reached 100m, Esha covered 90m. So ratio of their speeds = 10 : 9

Ratio of the speed of all the three = 100 : 90 : 81

By that time Anusha covered 100m, Esha Covers only 81.

11. Seven different objects must be divided among three persons. In how many ways this can be done if at least one of them gets exactly one object.

Sol: Division of m+n+p objects into three groups is given by $(m+n+p)!m!\times n!\times p!$

But 7 = 1 + 3 + 3 or 1 + 2 + 4 or 1 + 1 + 5

So The number of ways are $(7)!1!\times 3!\times 3!\times 12! + (7)!1!\times 2!\times 4! + (7)!1!\times 1!\times 5!\times 12! = 70 + 105 + 21 = 196$

12. George while driving along the highway saw road markers which are at equal distances from each other. He crosses the markers every 20 seconds. If he increases his speed by x meters per second, he crosses the markers at every 15 seconds. But if he increases his speed by y meters per second, he crosses the marker at every 10th second. If y-x = 40 meters per second, then what is the distance between two markers.

Sol: Let speed be =z m/s then Distance= 20z m

(z+x)15=20z; (z+y)10=20z

Also given that y - x = 40

solving we get 20z=1200

13. How many different 9 digit numbers can be formed from the number 223355888 by re-arranging its digits so that the odd digits occupy even position?

Sol: Odd places are 4 and these are occupied by 3355. So this can be done in 4!/ (2! 2!) = 6

There are 5 even numbers which have to be placed at 5 odd places. So 5!/(2!3!) = 10 ways

so total number of ways of arranging all these numbers are 10 * 6 = 60 ways

14. In a vessel, there are 10 litres of alcohol. An operation is defined as taking out five litres of what is present in the vessel and adding 10 litres of pure water to it. What is the ratio of alcohol to water after two operations?

a) 1 : 5

b) 2 : 3

c) 1 : 6

d) 3 : 2

Sol: Final concentration = Initial concentration (1−replacement quantityfinal volume)
Final concentration = =1×(1−1015)=13

Final concentration = 13×(1−1020)=16
So ratio of alcohol : water = 1 : 5

TCS specific Question bank

1. A manufacturer of chocolates makes 6 different flavors of chocolates. The chocolates are sold in boxes of 10. How many “different” boxes of chocolates can be made?

Sol:

If n similar articles are to be distributed to r persons, x1+x2+x3.....xr=n each person is eligible to take any number of articles then the total ways are n+r−1Cr−1

In this case x1+x2+x3.....x6=10

in such a case the formula for non negative integral solutions is n+r−1Cr−1

Here n =6 and r=10. So total ways are 10+6−1C6−1 = 3003

2. In a single throw with two dice, find the probability that their sum is a multiple either of 3 or 4.

a. 1/3

b. 1/2

c. 5/9

d. 17/36

Sol: Their sum can be 3,4,6,8,9,12

For two dice, any number from 2 to 7 can be get in (n-1) ways and any number from 8 to 12 can be get in (13 - n) ways.

Then possible ways are 2 + 3 + 5 + 5 + 4 + 1 = 20 possible cases.

So probability is (20/36)=(5/9)

3. B alone can do piece of work in 10 days. A alone can do it in 15 days. If the total wages for the work is Rs 5000, how much should B be paid if they work together for the entire duration of the work?

a. 2000

b. 4000

c. 5000

d. 3000

Sol:

Time taken by A and B is in the ratio of = 3:2

Ratio of the Work = 2 : 3 (since, time and work are inversely proportional)

Total money is divided in the ratio of 2 : 3 and B gets Rs.3000

4. On a 26 question test, 5 points were deducted for each wrong answer and 8 points were added for right answers. If all the questions were answered how many were correct if the score was zero.

a. 10

b. 11

c. 13

d. 12

Sol:

Let x ques were correct. Therefore, (26- x) were wrong

8x−5(26−x)=0

Solving we get x=10

5. Arun makes a popular brand of ice cream in a rectangular shaped bar 6cm long, 5cm wide and 2cm thick. To cut costs, the company had decided to reduce the volume of the bar by 19%. The thickness will remain same, but the length and width will be decreased by some percentage. The new width will be,

a. 5.5
b. 4.5
c. 7.5
d. 6.5

Sol:

Volume =l×b×h = 6×5×2 = 60 cm3
Now volume is reduced by 19%.
Therefore, new volume = (100−19)100×60=48.6
Now, thickness remains same and let length and breadth be reduced to x%
so, new volume: (x100×6)(x100×5)2=48.6
Solving we get x =90
thus length and width is reduced by 10%
New width = 5-(10% of 5)=4.5

6. If all the numbers between 11 and 100 are written on a piece of paper. How many times will the number 4 be used?

Sol: We have to consider the number of 4's in two digit numbers. _ _
If we fix 4 in the 10th place, unit place be filled with 10 ways. If we fix 4 in units place, 10th place be filled with 9 ways (0 is not allowed)
So total 19 ways.

Alternatively:

There are total 9 4's in 14, 24, 34...,94
& total 10 4's in 40,41,42....49
thus, 9+10=19.

7. If twenty four men and sixteen women work on a day, the total wages to be paid is 11,600. If twelve men and thirty seven women work on a day, the total wages to be paid remains the same. What is the wages paid to a man for a day's work?

Sol: Let man daily wages and woman daily wages be M and W respectively 24M+16W=11600
12M+37W=11600
solving the above equations gives M=350 and W=200

8. The cost price of a cow and a horse is Rs 3 lakhs. The cow is sold at 20% profit and the horse is sold at 10% loss. Overall gain is Rs 4200. What is the cost price of the cow?

Sol:

Profit = 4200
Profit =SP - CP
4200=SP - 300000 therefore SP=304200
x+y = 300000
1.2x + 0.9y = 304200
Solving for x = 114000 = CP of cow.

9. 1, 2, 2, 3, 3, 3, 4, 4, 4, 4, 1, 1, 2, 2, 2, 2, 3, 3, 3, 3, 3, 3, 4, 4, 4, 4, 4, 4, 4, 4, 1, 1, 1, 2, 2, 2, 2, 2, 2, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 4.....

In the above sequence what is the number of the position 2888 of the sequence.

a) 1

b) 4

c) 3

d) 2

Sol: First if we count 1223334444. they are 10

In the next term they are 20

Next they are 30 and so on

So Using $n(n+1)2\times10\leq2888$

For n = 23 we get LHS as 2760. Remaining terms 128.

Now in the 24th term, we have 24 1's, and next 48 terms are 2's. So next 72 terms are 3's.

The 2888 term will be “3”.

10. How many 4-digit numbers contain no.2?

Sol: Total number of four digit numbers =9000 (i.e 1000 to 9999)

We try to find the number of numbers not having digit 2 in them.

Now consider the units place it can be selected in 9 ways (i.e 0,1,3,4,5,6,7,8,9) Tens place it can be selected in 9 ways (i.e 0,1,3,4,5,6,7,8,9)

Hundreds place it can be selected in 9 ways (i.e 0,1,3,4,5,6,7,8,9)

Thousands place can be selected in 8 ways (i.e 1,3,4,5,6,7,8,9) here '0' cannot be taken Total number of numbers not having digit 2 in it =9 x 9 x 9 x 8 =5832

Total number of numbers having digit 2 in it = 9000-5832 =3168