Adobe Model Paper Questions

1. Of a set of 30 numbers, average of first 10 numbers = average of last 20 numbers. Then the sum of the last 20 numbers is?

A. Cannot be determined.
B. 2 x sum of last ten numbers
C. 2 x sum of first ten numbers
D. sum of first ten numbers

Explanation:
We know that sum = average x number of observations.
Let the common average = x
Now sum of first 10 numbers = 10x
Sum of the last 20 numbers = 20x.
So sum of the last 20 numbers = 2 × sum of the first ten numbers.

2. There are 20 persons sitting in a circle. In that there are 18 men and 2 sisters. How many arrangements are possible in which the two sisters are always separated by a man?

A. 18! x 2
B. 17!
C. 17x2!
D. 12

Explanation:
Let the first sister name is A. Now she can sit anywhere in the 20 places (Symmetrical). Now her sister B can sit to her left or right in 2 ways. Now the remaining 18 persons can be sit in 18 places in 18! ways.
Hence, Total = 18! × 2.

3. A alone can do 1/4th of the work in 2 days. B alone can do 2/3th of the work in 4 days. If all the three work together, they can complete it in 3 days so what part of the work will be completed by C in 2 days?

A. 1/12
B. 1/8
C. 1/16
D. 1/20

Explanation:

A can do the total work in 8 days, and B can do it in 6 days.
Let the total work be 24 units. Now capacities are
A = 24/8 = 3,
B = 24/6 = 4,
A + B + C = 24/3 = 8
So Capacity of C = 1 unit.
In two days C will do 2 units which is 2/24th part of the total work. So 1/12th part.

4. How many 6 digits even numbers can be formed from digits 1, 2, 3, 4, 5, 6, and 7 so that the digit should not repeat and the second last digit is even?

A. 6480
B. 320
C. 2160
D. 720

Explanation:

If the we have to form even numbers, unit's digit must be 2, 4, 6. i.e., 3 ways. Also 5th digit should be even. So it can be filled in 2 ways. Now remaining 5 digits can be filled in 5! ways. So total 5! × 3 × 2 = 720 ways.

5. The average marks of 3 students A, B and C is 60. When another student D joins the group, the new average becomes 56 marks. If another student E, who has 3 marks more than D, joins the group, the average of the 4 students B, C, D and E becomes 55 marks. How many marks did A get in the exam?

A. 50
B. 54
C. 51
D. 53

Explanation:

Given, that A + B + C = 60 × 3 = 180.
A + B + C + D = 56 × 4 = 224.
Therefore, D = 44.
E = 44 + 3 = 47
Given, B + C + D + E = 55 × 4 = 220.
B + C + 44 + 47 = 220
⇒ B + C = 220 - 91 = 129
So A + 129 = 180
=> A = 51.

6. One day, Eisha 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 Eisha usually take to reach her office from home?

A. 20
B. 40
C. 60
D. 80

Explanation:

She got late to the office 20 minutes late as she drove at 3/4 the of the speed.
Given, d/ [(3/4) s] −(d/s) = 20.
=> (d/s) [(4/3) −1] = 20.
=> Time = d/s = 60.

7. Four people each roll a fair dice once. Find the probability that at least two people will roll the same number?

A. None
B. 5/18
C. 13/18
D. 1295/1296

Explanation:

The probability of at least two persons roll the same number = 1 – None of them rolls the same number.

= 1− [6/6 × 5/6 × 4/6 × 3/6] = 1− 5/18 = 13/18.

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

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 at least one of the exams. 100 - 80 = 20 failed in both.

Probability = 20/100 = 1/5.

9. 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

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.

10. 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
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 = 15m.

11. 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
Explanation:
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 integer for k = an odd number.
So for k = 1, 3, 5, ... 99 we can write a number as a sum of four consecutive integers.
So there are 50 numbers.

12. Eisha 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 Eisha purchase the wheat from the wholesaler?
A. 3
B. 2.5
C. 2.43
D. 2.7
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 loses 10% of the price because of the faulty spring balance. She loses 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 Eisha purchase the wheat from the wholesaler for $2.43.

13. 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

Explanation:
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.

14. 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?

A. 57%
B. 60%
C. 53%
D. 55%

Explanation:
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%

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

A. 5
B. 6
C. 9
D. 7

Explanation:
Let the work be 60 units. If Vicky 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, Vicky 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.

16. In a vessel, there are 10 liters of alcohol. An operation is defined as taking out five liters of what is present in the vessel and adding 10 liters 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

Explanation:
Final concentration = Initial concentration (1−replacement quantity/final volume)
Final concentration = =1× (1−10/15) =1/3.
Final concentration = 13× (1−10/20) =1/6.
So ratio of alcohol: water = 1: 5.

17. 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%

Explanation:
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= [(1000−700)/1000] ×1000=30%.

18. W, X, Y, Z are integers. The expression X - Y - Z is even and the expression Y - Z - W is odd. If X is even what must be true?

A. W must be odd
B. Y - Z must be odd
C. Z must be even
D. Z must be odd

Explanation:
X is even so Y, Z both are even or both are odd.
Now Y - Z in both cases even. So (Y - Z) - W = odd happens only when w is odd.

19. Two cars start from the same point at the same time towards the same destination which is 420 km away. The first and second car travel at respective speeds of 60 kmph and 90 kmph. After travelling for some time the speeds of the two cars get interchanged. Finally, the second car reaches the destination one hour earlier than the first. Find the time after which the speeds get interchanged?

A. 10
B. 4
C. 5
D. 9
Explanation:
Let the total time taken by the cars be a and b.
Let the time after which the speed is interchanged be 't'.
For car A, 60t+90(a-t) = 420, 90a - 30t = 420 .....(1)
For car B, 90t + 60(b-t) = 420, 60b + 30t = 420 .....(2)
Using both (1) and (2), we get 90a + 60b = 840
But as a - b =1, 90a + 60(a-1) = 840.
Solving a = 6.
Substituting in equation 1, we get t = 4.

20. The five tires of a car (four road tires and one spare) were used equally in a journey of 40,000 kms. The number of kms of use of each tire was
A. 8000
B. 10000
C. 32000
D. 40000
Explanation:
Total kilometers travelled by 4 tire = 40000 × 4 = 1,60,000.
This has to be share by 5 tires.
So each tire capacity = 1,60,000 / 5 = 32, 000.
You have a doubt, after we travel 32,000 km, we are left with 4 worn tires and one new tire.
But If the tires are rotated properly after each 8000 km, all the tires are equally used.

21. The perimeter of an equilateral triangle and regular hexagon are equal. Find out the ratio of their areas?
A. 3:2
B. 2:3
C. 1:6
D. 6:1
Explanation:
Let the side of the equilateral triangle = a units and side of the regular hexagon is b units.
Given that, 3a=6b
=> a/b=2/1.
Now ratio of the areas of equilateral triangle and hexagon = (√3/4) a2 : (3√3/2)b2
=> (√3/4)22 : (3√3/2)12
=>2:3.

22. A cow and a horse are bought for Rs 200000. The cow is sold at a profit of 20% and the horse is sold at a loss of 10%. The overall gain is Rs 4000. The cost price of the cow is:
A. 120000
B. 80000

C. 70000
D. 130000
Explanation:
Let CP of cow be x.
CP of horse= 200000-x

According to formula;
SP of Cow= 100+20/100*x = 6x/5
SP of Horse= 100-10/100*(200000-x) = 1800000-9x/10

Total SP= 6x/5 + 1800000-9x/10 = 3x+1800000/10
Total CP= 200000.

Gain= SP-CP.
= 3x + 1800000/10 - 200000
= 3x-200000.

In question, given; Gain= 4000
=> 3x-200000= 4000.
=> 3x= 240000.
=> x= 80000.

23. A person buys a horse for 15 pounds. After one year, he sells it for 20 pounds. After one year, again he buys the same horse at 30 pounds and sells it for 40 pounds. What is the overall profit percent for that person over both the transactions?
A. 15%
B. 33.33%
C. 45%
D. 60%
Explanation:
Total c.p=45
Total s.p=60
Profit%= (15/45) *100=33.33%.

24. If log 0.318=0.3364 and log 0.317=0.33320 then log 0.319 =?
A. 0.33365
B. 0.3368
C. 0.3396
D. 0.3369
Explanation:
log 0.318 / log 0.317 = log (0.318 - 0.317) = log 0.001 = 0.3364 / 0.33320 = 1.0096.
Now,
log 0.318 * log 0.001 = log (0.318 + 0.001) = log 0.319 = 0.3364 * 1.0096 = 0.3396.

25. Ajith sells a table to Ajay at 10% profit and Ajay sells it to Anoob at 10% loss. At what price did Ajith purchase the table if Anoob paid Rs.2178?

A. Rs 2100
B. Rs.2150
C. Rs.2200
D. Rs.2250

Explanation:
Increase by 10% & decrease by 10% means there is a loss of 1% totally.
That loss in 1% percent is added to Rs. 2178 to get actual price.
i.e. 1% of 2178=21.78
=> 2178+21.78 = 2199.78(=2200 approx.).

26. A bought 100kg of rice for Rs 1100 and sold it at a loss of as much money as he received for 2o kg of rice. At what price did he sell the rice?

A. 880
B. 580
C. 980
D. 750

Explanation:
As the price of 100 kg of rice for Rs 1100.
Price of 20kg rice will be 1100*20/100=220.
The selling price will be 1100-220=Rs 880.

27. A man buys a cycle for Rs. 1400 and sells it at a loss of 15%. What is the selling price of the cycle?

A. Rs. 1090
B. Rs. 1160
C. Rs. 1190
D. Rs. 1202

Explanation:
SP = (100 - Loss %)/100 x C.P.
=> (100 - 15)/100 x 1400.
=> (85/100) x 1400.
=> 1190.