MCQS EDITORIAL

- Problem Statement:

  A fraction when added to 4 times its reciprocal is 533/77. what will be the value of 4 times the fraction added to the reciprocal of the fraction?

  Choices:

  - 317/77 (Correct Answer)
  - 337/77
  - 7693/308
  - 7893/308

  Explanation:

  p/q + 4*q/p = 533/77 4*p/q + q/p = ??

  (p^2 + 4*q^2)/pq = 533/77
  pq = 77

  There are four cases:-
  p = 1 q = 77
  p = 7 q = 11
  p = 11 q = 7
  p = 77 q = 1

  For p=7 and q=11 above condition satisfied:
  4*p/q + q/p = 317/77

- Problem Statement:

  A fitness activity survey taken by 240 people revealed that 100 people go for walk, 110 people do yoga, and 140 go for cycling. It was also found that 30 people go for both - walks and yoga, 50 people go for both - walks and cycling, 50 people do both - cycling and yoga, and 20 people do all the three activities.

  How many people participate only in one kind of fitness activity?

  Choices:

  - 120
  - 150 (Correct Answer)
  - 180
  - 240

  Explanation:

  Use Venn diagram
  Answer is 150.

- Problem Statement:

  How many four digits odd numbers can be formed such that 9 is not in the unit's place and if 2 is one of the digits, then 6 is the next one?

  Choices:

  - 1152
  - 2116
  - 2660 (Correct Answer)
  - 2988

  Explanation:
  let the digits be considered as 4 vacant places..like _ _ _ _ (4 spaces or blanks)
  let us fill the numbers from the right and let us first leave 2 for the moment!! Leaving 2 and '0' (as it will not satisfy the condition of 4 digit)…Thus the first digit can be filled by 8 different no.s (without 2 & 0) .I hope you are clear with that..
  Coming to the 2nd digit,it can be filled by 9 no.s (including 0).
  Again 3rd can also be filled by 9 digits (same as above).
  Final step of the first section…i.e the 4th digit
  here it can only be filled by 4 no.s (1,3,5,7..as we do not consider 9)
  So let us multiply all these no.s…8*9*9*4 = 2592
  NOW consider 2 and 6 as if they are tied together i.e 2 goes only with 6 on its right side as the next digit !!! First take the first 2 digits… like 26_ _….here the first space can occupy 9 no.s and the second by 4….thus 9*4 = 36
  Next, take 2,6 to the next space..like _ 26 _…here the first space can be filled by 8 no.s (except 0 and 2) and last space again by 4…thus 8*4 = 32
  ADD all of them = 2660

- Problem Statement:

  In a race track of length 1 kilometer, Kageyama beats Hinata by 45 meters in distance and by 9 seconds in time. Then what is the time taken by Kageyama to complete the race?

  Choices:

  - 3 minutes 20 seconds
  - 3 minutes 11 seconds (Correct Answer)
  - 3 minutes 9 seconds
  - 3 minutes

  Explanation:

  Let us assume Kageyama's speed to be v1 and time Taken by him to be t, then time taken by Hinata will be equals to t + 9. Let us also assume Hinata's speed to be v2.
  We know speed * time = distance
  V2 * (t + 9) = 1000
  V1 * t = 100
  S0, v1 * t = v2 * (t + 9)
  In time t, distance travelled by Kageyama is 1000 meters, so in time t distance travelled by Hinata will be 955 meters.
  So, v2 = 955 / t.
  From all of the results above, we finally have
  955 * (t + 9) / t = 100
  Solving the above equation, t = 191 seconds = 3 minutes and 11 seconds.

- Problem Statement:

  A box contains 4 white, 5 red, and 6 blue balls. If three balls are drawn at random from the box, what is the probability that all of them are white?

  Choices:

  - 4/91
  - 4/455 (Correct Answer)
  - 2/455
  - 2/91

  Explanation:

  In total, we have 15 balls and among them 4 are white.
  Probability = P(desired outcome) / P(any possible outcome)
  P(desired outcome) = 4C3
  P(any possible outcome) = 15C3
  where, ncr is number of ways to select r items from n available items.
  Probability = (4 * 3 * 2) / (15 * 14 * 13)
  = 4/455

- Problem Statement:

  Saitama goes to the grocery store on the day of the super sale, he bought groceries worth Rs.200 and gives Rs.500 note to the owner. Owner being short on change gets the change for the note from his friend Levi and gave Rs.300 to Saitama. After some days Levi found the note to be fake so he took Rs.500 back from the owner. What is the money lost by the owner at the end?

  Choices:

  - 500 (Correct Answer)
  - 300
  - 1200
  - 200

  Explanation:

  Owner gave grocies worth Rs. 200 to Saitama and Rs. 300 as Cash and in returns did not get a single penny as Levi took back Rs. 500 from owner. So, money lost by owner is Rs. 500.

- Problem Statement:

  Consider the pseudo code given below

  ```
  int ans=0;

  for (i = 1; i <= n; i++)
  {
      if (i is odd)
          ans -= i;
      else
          ans -= i;
  }
  ```

  What will be the value of ans variable?

  Choices:

  - -1 +2 -3 +4 -5 +6 .....upto n numbers
  - 1 - 2 + 3 - 4 + 5 - 6.....upto n numbers
  - 1 + 2 +3 + 4 + 5 ..... upto n numbers
  - -1 -2 -3 -4 -5.....upto n numbers (Correct Answer)

  Explanation:

  Value i is always getting subtracted from ans
  So ans is -1 -2 -3 ……upto n numbers

- Problem Statement:

  What is the output of the following code:

  Consider all the necessary declarations of header files and other things are already done

  char keys[]={A,B,C,D};

  printf("%d ",*keys);

  printf("%d",keys[0]);

  Choices:

  - A 65
  - 65 65 (Correct Answer)
  - A A
  - 65 A

  Explanation:

  Name of the array represents a pointer to the first element of the array.
  So dereferencing the array name would print the first element of the array
  And array_name[0] represents the first element of the array %d is used so ascii value would get printed instead of the characters.

- Problem Statement:

  What is the output of the following code?

```
int n = 3;
int a[n] = {100, 200, 300};
int i = 0;
while (i < n - 1)
{
i++;
printf("%d ", a[i]);
}
```

Choices:

- 100 200
- 100 200 300
- 200 300 (Correct Answer)
- 200

Explanation:

Before executing printf for the first time i value would be 1
So a[1] would get printed and then during the second time,before
Printf value of i would be 2 so a[2] would get printed.
Now loop won't run any more as 2

- Problem Statement:

  What will be the output of the following code?

```
#include<stdio.h>
int i;
int main() {
    for(;1;);
    printf("%d",i);
}
```

  Choices:

  - 0
  - Runtime Error
  - Compilation Error
  - Infinite Loop (Correct Answer)

  Explanation:

  The syntax of the for loop is:

```
for (initializationStatement; testExpression;
updateStatement)
{
      // statements inside the body of loop
 }
```

  So the testExpression is 1(true) for every iteration. So our loop never breaks and runs infinitely.