FINAL EXAM NOTICE

Duration

2014-12-13 00:00 --------- 2014-12-23 23:30

Submit Chances

You can only submit one or two times per question, and you are not allowed to discuss these problems in forum before the deadline.

Time

Since there is no couter available on edx platform, we recommend you to take your time to think about the question carefully. If you want to set a time limit to the exam by yourself, I think 3 hours would be good.

Discussions

You are not allowed to discuss about these questions in forum. If you encounter some issues, please send email to Prof.Ma(myc@mail.tsinghua.edu.cn).

FE_1 (5/5 points)

There are two rows of seats in the classroom and each row has six seats. If a class has nine students, and among them three female students G1, G2 and G3 always sit in the first row, two male students B1, B2 always sit in the second row. In how many different ways can all the nine students sit in the classroom?

3024000

3024000

Final Check | Save | *You have used 1 of 2 submissions*

FE_2 (5/5 points)

What is the next permutation for the sequence “25431” in a full permutation of {1,2,3,4,5} in the lexicographical order

- 35421
- 31245 ✔
- 21345
- 31254

You have used 1 of 1 submissions

FE_3 (5/5 points)

Five pairs of fathers and children (totally ten people) take part in the program “Dad, where are we going?” In this program, one of the rounds is known as “Exchanging fathers”, where each father is grouped with a child that is not his own child. How many possible arrangements for this round are there?

44

44

Final Check Save *You have used 1 of 2 submissions*

FE_4 (10/10 points)

If three people roll a dice once, how many ways can the sum of the three people’s rolls add up to exactly 9?

25

25

If we roll 19 identical dices together at the same time and calculate the sum of the numbers rolled, how many different possible values of the sum can we get?

96

96

Final Check Save *You have used 1 of 2 submissions*

FE_5 (7/7 points)

We have two kind of tiles : 1 x 1 and 2 x 2, and use them to cover the 8 x 3 road without overlapping, how many different ways to arrange tiles there?

171

171

Final Check Save *You have used 1 of 2 submissions*

FE_6 (5 points possible)

There are 10 pairs of basketball shoes, 12 pairs of leather shoes, if you pick one shoe each time, how many picks do you need to guarantee that you get one pair of the same shoes.

- 13
- 11
- 23
- 3 ✖

You have used 1 of 1 submissions

FE_7 (6 points possible)

If the greatest common divisor of two integers is 1, then we say those two integers are relatively prime to each other, how many even integers which are between 1 and 1000 (including 1 and 1000) and relatively prime to 105?

457

457

You have used 2 of 2 submissions

FE_8 (7 points possible)

Suppose a manufacturer produces the football as shown below, they want to print one 2014 football World Cup logo and one Brazilian flag on it, note there are only two signs totally. These two signs are printed in two polygons. If we do not consider the position and direction of a sign in its polygon, then how many different arrangements are there?

9

9

You have used 2 of 2 submissions

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