



Name-Surname:

13.11.2014

ID Number:

CLASSWORK 5

A computer program randomly chooses 4 distinct numbers from the set $\{1, 2, \dots, 9\}$ and prints them.

How many times must we run the program to make sure that same set of 4 numbers are printed 7 times?

Answer:

There are $\binom{9}{4} = 126$ different sets. Therefore if we run this 126×6 times, each set can appear 6 times. So we have to run it

$$126 \times 6 + 1 = 757$$

times to be certain that one set appears 7 times.



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Consider the set $\{1, 2, \dots, 33\}$. We will choose n distinct numbers randomly from this set. We want to be certain that the sum of two of these integers is odd.

What is minimum n ?

Answer:

There are 16 even and 17 odd numbers in the set, so we have to choose 18 to guarantee that we choose at least one odd and one even.