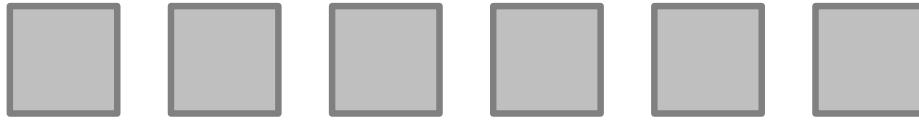




Problem of the Week

Problem E

Access Denied



A six-digit code is required to gain access to a secure building.

You know the following about the correct code:

- only the digits 1, 2, 3, 4, 5, and 6 are used in the correct code and each of these digits appears exactly once;
- the fifth digit in the code is not a 5;
- the sixth digit in the code is not a 6; and
- there is only one correct code.

What is the probability that you are able to enter the correct code?

Note: Often in counting problems, products such as $4 \times 3 \times 2 \times 1$ are encountered. This product can be written using factorial notation, as $4!$. In general, if n is a positive integer, then $n! = n \times (n - 1) \times (n - 2) \times \cdots \times 3 \times 2 \times 1$.

