



Problem of the Week

Problem C

000000 Means the End

The product of the positive integers 1 to 6 is

$$6 \times 5 \times 4 \times 3 \times 2 \times 1 = 720$$

and can be written in an abbreviated form as $6!$. We say, “6 *factorial*”. So $6! = 720$.

The product of the positive integers from 1 to 12 is

$$12 \times 11 \times 10 \times \dots \times 3 \times 2 \times 1 = 479\,001\,600$$

and can be written in an abbreviated form as $12!$. We say, “12 *factorial*”.

The \dots represents the product of all of the missing integers between 10 and 3.

For a positive integer n , the product of the positive integers from 1 to n is $n!$.

Find the smallest possible value of n such that $n!$ ends in exactly six zeroes.

