

What is T_5 , the average number of times step E1 is performed when $n = 5$?

$T_n = \{ \text{Average number of times step E1 is performed for a fixed } n \text{ and variable } m \}$

The problem is dependent of the equivalence classes (remainders) of the division of numbers by n , therefore we should find the average repetition for $m \in S$, for $S \in \mathbb{Z}/n\mathbb{Z}$

if $m \bmod 5 = 0 \Rightarrow$ E1 executes 1 time

if $m \bmod 5 = 1 \Rightarrow$ E1 executes 2 time

if $m \bmod 5 = 2 \Rightarrow$ E1 executes 3 times

if $m \bmod 5 = 3 \Rightarrow$ E1 executes 4 times

if $m \bmod 5 = 4 \Rightarrow$ E1 executes 3 times

The average is : $\frac{13}{5}$