

Answer on Question #47092 – Math – Combinatorics | Number Theory

True or false. Give reason.

The total number of possible sequences for processing 5 jobs on 4 machines is 5^4 .

Solution

False.

Suppose machines admit simultaneous processing different jobs. The total number of possible sequences for processing 5 jobs on 1 machine is $5!$. Thus the total number of possible sequences for processing 5 jobs on 4 machines is $(5!)^4 \neq 5^4$.

Suppose we can choose only one job out of 5 to process on one machine. The total number of possible sequences for processing 5 jobs on 1 machine is 5. Thus the total number of possible sequences for processing 5 jobs on 4 machines is 5^4 .