

Answer on Question #83758 – Math – Discrete Mathematics

Question

If we reduce the number of elements by two, the number of permutations reduces thirty times. Find the number of elements.

Solution

Let the number of elements be N . Thus, the number of permutations is $N!$. If we reduce the number of elements by two (the number of elements becomes $N - 2$), the number of permutations, equal to $(N - 2)!$, reduces thirty times.

$$\text{Hence } \frac{N!}{(N-2)!} = 30 \Leftrightarrow N(N-1) = 30 \Rightarrow N = 6.$$

Answer:

The number of elements is 6.