Profesor Blaga Mirela-Gabriela

SUME

Calculaţi sumele:

1. $1 \cdot 2 + 2 \cdot 3 + 3 \cdot 4 + \ldots + n(n+1)$
2. $1 \cdot 2 \cdot 3 + 2 \cdot 3 \cdot 4 + \ldots + n(n+1)(n+2)$
3. $\frac{1}{1 \cdot 2} + \frac{1}{2 \cdot 3} + \cdots + \frac{1}{n(n+1)}$
4. $\frac{1}{1 \cdot 2 \cdot 3} + \frac{1}{2 \cdot 3 \cdot 4} + \cdots + \frac{1}{n(n+1)(n+2)}$
5. $\sum_{k=1}^{n} k \cdot k!$
6. $\sum_{k=1}^{n} \frac{k}{(k+1)!}$
7. $\sum_{k=2}^{n} ln\left(1 - \frac{1}{k^2}\right)$
8. $\sum_{k=1}^{n} \frac{2k+1}{k^2(k+1)^2}$
9. $\sum_{k=1}^{n} \frac{1}{\sqrt{2k + \sqrt{4k^2 - 1}}}$
10. $\sum_{k=1}^{n} \frac{1}{1 + tgx_k} + \sum_{k=1}^{n} \frac{1}{1 - tgx_k} + \sum_{k=1}^{n} \frac{1}{1 + ctgx_k} + \sum_{k=1}^{n} \frac{1}{1 - ctgx_k}, x_k \neq \frac{k\pi}{4}, k \in \mathbb{Z}$