

Problem 1. Evaluate

$$\frac{1}{1 \cdot 2 \cdot 3} + \frac{1}{2 \cdot 3 \cdot 4} + \frac{1}{3 \cdot 4 \cdot 5} + \dots + \frac{1}{n(n+1)(n+2)}$$

Problem 2. Find the limit

$$\lim_{n \rightarrow \infty} \left(\cos \frac{x}{n} + \underset{\substack{\downarrow \\ \in \mathbb{R}}}{h \sin \frac{x}{n}} \right)^n$$