

## Matematička analiza 2 - 8. auditorne vježbe

1. Izračunajte sume sljedećih redova:

$$(a) \sum_{n=2}^{\infty} \frac{1}{n^2 - 1},$$

$$(b) \sum_{n=0}^{\infty} \frac{\operatorname{ch}^2 n + 3^{n+1}}{4^{2n-1}}.$$

2. Ispitajte konvergenciju sljedećih redova:

$$(a) \sum_{n=1}^{\infty} \left( \sqrt{n^2 + 2n} - \sqrt{n^2 - n} \right)^n,$$

$$(g) \sum_{n=1}^{\infty} \frac{|\sin(3^n)|}{3^n},$$

$$(b) \sum_{n=1}^{\infty} \left( \frac{2n+1}{2n-1} \right)^n,$$

$$(h) \sum_{n=2}^{\infty} \frac{1}{n \ln^3(2n)},$$

$$(c) \sum_{n=3}^{\infty} \frac{10^n}{n \cdot 4^{2n+1}},$$

$$(i) \sum_{n=1}^{\infty} \frac{2n}{(n+1)^{5/2} + n^2 + 1},$$

$$(d) \sum_{n=0}^{\infty} \frac{n!}{n^n},$$

$$(j) \sum_{n=1}^{\infty} \operatorname{arctg}(n) \sin\left(\frac{1}{n}\right),$$

$$(e) \sum_{n=1}^{\infty} (-1)^n \ln\left(1 + \frac{1}{n}\right),$$

$$(k) \sum_{n=0}^{\infty} \operatorname{arctg} 2^{-n},$$

$$(f) \sum_{n=1}^{\infty} \ln\left(1 + \frac{1}{n}\right),$$

$$(l) \sum_{n=1}^{\infty} \sin(\sqrt{n^3 + 1} - \sqrt{n^3}).$$