VRSTE

1. Ugotovi, ali podane vrste konvergirajo:

a) $\displaystyle\sum_{n=1}^{\infty}\left(\frac{n+1}{n}\right)^n$ b) $\displaystyle\sum_{n=1}^{\infty}(\sqrt{n}-\sqrt{n-1})$ c) $\displaystyle\sum_{n=1}^{\infty}\frac{1}{n(n+1)}$

d) $\displaystyle\sum_{n=1}^{\infty}\frac{1}{4n^2-1}$ e) $\displaystyle\sum_{n=1}^{\infty}\frac{2^n}{n^2+2^n}$ f) $\displaystyle\sum_{n=1}^{\infty}\frac{n}{(n+1)!}$

2. S pomočjo primerjalnega kriterija ugotovi, ali podane vrste konvergirajo:

a) $\displaystyle\sum_{n=1}^{\infty}\frac{1}{2^n-1}$ b) $\displaystyle\sum_{n=1}^{\infty}\frac{1}{n2^n}$ c) $\displaystyle\sum_{n=1}^{\infty}\frac{\ln n}{n}$

d) $\displaystyle\sum_{n=1}^{\infty}\frac{1+n}{1+n^2}$ e) $\displaystyle\sum_{n=1}^{\infty}\frac{1}{10n+1}$ f) $\displaystyle\sum_{n=1}^{\infty}\frac{1}{\sqrt{n(n+1)}}$

3. S pomočjo kvocientnega oz. korenskega kriterija ugotovi, ali podane vrste konvergirajo:

a) $\displaystyle\sum_{n=1}^{\infty}\frac{a^n}{n!}\,,\quad a>0$ b) $\displaystyle\sum_{n=1}^{\infty}\left(\frac{n+1}{2n-1}\right)^n$ c) $\displaystyle\sum_{n=1}^{\infty}\frac{2n-1}{(\sqrt{2})^n}$

d) $\displaystyle\sum_{n=1}^{\infty}\frac{2^n}{8+3^n}$ e) $\displaystyle\sum_{n=1}^{\infty}\left(\frac{n}{n+1}\right)^{n^2}$ f) $\displaystyle\sum_{n=1}^{\infty}\cos^n\left(\frac{\pi(n-1)}{2n}\right)$

g) $\displaystyle\sum_{n=1}^{\infty}\left(\frac{n}{3n-1}\right)^{2n-1}$ h) $\displaystyle\sum_{n=1}^{\infty}\frac{(n!)^2}{(2n)!}$ i) $\displaystyle\sum_{n=1}^{\infty}\frac{n}{(\ln n)^n}$

4. S pomočjo integralskega kriterija ugotovi, ali podane vrste konvergirajo:

a) $\displaystyle\sum_{n=1}^{\infty}e^{-\sqrt{n}}$ b) $\displaystyle\sum_{n=2}^{\infty}\frac{1}{n\ln n}$ c) $\displaystyle\sum_{n=2}^{\infty}\frac{1}{n(\ln n)^2}$

5. Ugotovi, ali podane vrste konvergirajo:

a) $\displaystyle\sum_{n=1}^{\infty}e^{-\sqrt{n}}\sin n$ b) $\displaystyle\sum_{n=1}^{\infty}(-1)^n\left(\frac{n}{2n-1}\right)^n$ c) $\displaystyle\sum_{n=1}^{\infty}(-1)^n\ln\left(1+\frac{1}{n}\right)$