

## 23. cvičení

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### Příklady

Vyšetřete absolutní i neabsolutní konvergenci řad. (Není-li napsáno jen NAK.)

1. (a) NAK

$$\sum_{n=1}^{\infty} \frac{n}{(n+1)\sqrt{n+1}} \cos(3n+2)$$

(d)

$$\sum_{n=1}^{\infty} \frac{\sqrt{2n+1} - \sqrt{2n-1}}{\sqrt{n}} \sin \frac{1}{\sqrt[3]{n}}$$

(b)

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

(e) NAK

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

(c)

$$\sum_{n=1}^{\infty} \frac{n+1}{n+3} \left( \ln \frac{n+3}{n+1} \right)^n$$

(f) NAK

$$\sum_{n=1}^{\infty} \frac{\sin n + \sqrt{n} \cos n}{n} \cos \frac{1}{n}$$

2. (a)

$$\sum_{n=1}^{\infty} \frac{n!+1}{(n+2)!+2}$$

(f) NAK

$$\sum_{n=1}^{\infty} \left( n \sin \frac{1}{n} - 1 \right) \sin 3n$$

(b) NAK

$$\sum_{n=1}^{\infty} \frac{\arctan \sqrt{n}}{n} \sin(2n+1)$$

(g)

$$\sum_{n=1}^{\infty} \frac{(2n)!}{4^n n! n!}$$

(c)

$$\sum_{n=1}^{\infty} \frac{\binom{n}{2} + \binom{n}{3}}{\binom{n}{4} + \binom{n}{5}}$$

(h) NAK

$$\sum_{n=1}^{\infty} \frac{\left( \frac{n}{n+1} \right)^3}{2n + \frac{100}{n}} \cos \left( \frac{2\pi n}{3} \right)$$

(d)

$$\sum_{n=1}^{\infty} \frac{n^{10}}{2^n+1} \sin(n\sqrt{\pi})$$

(i)

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

(e)

$$\sum_{n=1}^{\infty} \frac{\sqrt[3]{n^3+1} - n}{\sqrt[3]{n^{3/4}+2} - \sqrt[3]{n^{3/4}+1}}$$

(j)

$$\sum_{n=1}^{\infty} \left( \frac{1+2^n}{3^n} + \frac{\sqrt{n+2} - \sqrt{n+1}}{\sqrt[4]{n}} \right)$$