

1. Pomoci l'Hospitalova pravidla spoctete

(a)

$$\lim_{x \rightarrow 0^+} \frac{\ln \cos(ax)}{\ln \cos(bx)}$$

(e)

$$\lim_{x \rightarrow 0} \frac{\operatorname{tg} x - x}{x - \sin x}$$

(b)

$$\lim_{x \rightarrow +\infty} \frac{e^{bx}}{x^n}$$

(f)

$$\lim_{x \rightarrow 1} \frac{\sin(\pi x)}{x - 1}$$

(c)

$$\lim_{x \rightarrow 0} \frac{\cosh x - \sqrt{\cos x}}{x^2}$$

(g)

$$\lim_{x \rightarrow 0^+} x^a \ln x$$

(d)

$$\lim_{x \rightarrow +\infty} x \left(\frac{\pi}{2} - \operatorname{arctg} x \right)$$

(h)

$$\lim_{x \rightarrow 0} \frac{e^{ax} - e^{bx}}{\sin(ax) - \sin(bx)}$$

2. Pomoci Taylorova polynomu spoctete

(a)

$$\lim_{x \rightarrow 0} \frac{e^x - \sin x - 1}{x^2}$$

(e)

$$\lim_{x \rightarrow 0^+} \frac{\cos x - \cosh x}{x^3}$$

(b)

$$\lim_{x \rightarrow 0} \frac{(e^{x^2} - 1)(\sin x - x)^2}{(\cos x - 1)^2 \sin^4 x}$$

(f)

$$\lim_{x \rightarrow 0} \frac{\sqrt{1+x^2} - \sqrt[3]{1-x^2}}{x^2}$$

(c)

$$\lim_{x \rightarrow 0} \frac{e^x - e^{\sin x}}{x^3}$$

(g)

$$\lim_{x \rightarrow 0} \frac{\sqrt{\cos x} - 1}{\arcsin^2 x}$$

(d)

$$\lim_{x \rightarrow 0} \frac{\cos x - e^{-x^2/2}}{x^4}$$

(h)

$$\lim_{x \rightarrow 0} \frac{\ln(\cos x)}{x}$$