

Určete limitu pomocí l'Hospitalova pravidla:

$$1. \lim_{x \rightarrow \infty} \frac{\ln x}{e^x} = 0$$

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

$$3. \lim_{x \rightarrow 0} \frac{x - \sin x}{\operatorname{tg} x} = 0$$

$$4. \lim_{x \rightarrow 1} \frac{\ln x}{x - 1} = 1$$

$$5. \lim_{x \rightarrow 1} \frac{x - 1 + \ln x}{x^2 - 1} = 1$$

$$6. \lim_{x \rightarrow 0} \frac{x - \sin x}{x^3} = \frac{1}{6}$$

$$7. \lim_{x \rightarrow 0} \frac{\ln(\cos x)}{\sin^2 x} = -\frac{1}{2}$$

$$8. \lim_{x \rightarrow 2} \frac{x^3 - 2x - 4}{x^2 - x - 2} = \frac{10}{3}$$

$$9. \lim_{x \rightarrow \infty} \frac{e^{2x}}{x^3} = \infty$$