

Limity určované přímo z grafů:

$$1. \lim_{x \rightarrow \infty} \operatorname{arccotg} \frac{1}{x} = \frac{\pi}{2}$$

$$2. \lim_{x \rightarrow 0^+} \operatorname{arccotg} \frac{1}{x} = 0$$

$$3. \lim_{x \rightarrow 0^+} \operatorname{arctg} \ln x = -\frac{\pi}{2}$$

$$4. \lim_{x \rightarrow \infty} e^{-\sqrt{x}} = 0$$

$$5. \lim_{x \rightarrow -\infty} \left(\frac{1}{2}\right)^{x^2} = 0$$

$$6. \lim_{x \rightarrow \frac{\pi}{2}^+} \operatorname{tg} x \cdot \operatorname{cotg} \left(x - \frac{\pi}{2}\right) = -\infty$$

$$7. \lim_{x \rightarrow 0} \frac{\operatorname{arccotg} x}{\arccos x} = 1$$

$$8. \lim_{x \rightarrow \infty} \frac{\ln x}{\operatorname{arctg} x} = \infty$$

$$9. \lim_{x \rightarrow \infty} \sqrt{x^2 + 1} = \infty$$

$$10. \lim_{x \rightarrow 0^+} \left(\log_{\frac{1}{2}} x\right) (\log_2 x) = -\infty$$

$$11. \lim_{x \rightarrow 0} \left(\arccos \frac{2x}{1+x^2} + \frac{\operatorname{arctg} x}{x+1}\right) = \frac{\pi}{2}$$

Limity typu  $\left\|\frac{k}{0}\right\|$ :

$$1. \lim_{x \rightarrow 3} \frac{2x-1}{9-x^2} = \text{neex.}$$

$$2. \lim_{x \rightarrow 2} \frac{x+1}{\ln(x-1)} = \text{neex.}$$

$$3. \lim_{x \rightarrow 1} \frac{3}{(x-1)^2} = \infty$$

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

$$5. \lim_{x \rightarrow 1} \frac{3x-1}{\sin(x-1)} = \text{neex.}$$

$$6. \lim_{x \rightarrow -2} \frac{1+2x}{\left(\frac{x}{2}+1\right)^2} = -\infty$$

$$7. \lim_{x \rightarrow -1} \frac{1-x^3}{1+x^3} = \text{neex.}$$

$$8. \lim_{x \rightarrow 1} \frac{2-3x}{\ln x} = \text{neex.}$$

$$9. \lim_{x \rightarrow 0} \frac{x-1}{\sin^2 x} = -\infty$$

$$10. \lim_{x \rightarrow 0} \frac{2^{-x}}{\operatorname{arctg}^4 x} = \infty$$

$$11. \lim_{x \rightarrow 0} \left(\frac{\operatorname{arccotg} x}{\arccos x} - \frac{x-1}{\sin^2 x}\right) = \infty$$