

مثالها

(مثال) حدود زیر را محاسبه نمایید.

$$31) \lim_{x \rightarrow a} \frac{\sin x - \sin a}{\cos x - \cos a}$$

$$32) \lim_{x \rightarrow \pi} \frac{1 + \cos^3 x}{\sin^2 x}$$

$$33) \lim_{x \rightarrow \frac{\pi}{4}} \frac{\cos 2x}{\cot gx - \tan x}$$

$$34) \lim_{x \rightarrow \frac{\pi}{4}} \frac{\cos\left(x + \frac{\pi}{4}\right)}{\tan x - 1}$$

$$35) \lim_{x \rightarrow \frac{\pi}{2}} \frac{\cos x}{\sqrt[3]{(1 - \sin x)}}$$

$$36) \lim_{x \rightarrow 0} \frac{\cos x - \sqrt[3]{\cos x}}{\sin^2 x}$$

$$37) \lim_{x \rightarrow 0} \frac{\tan x - \sin x}{\sin x (\cos 2x - \cos x)}$$

$$38) \lim_{x \rightarrow \frac{\pi}{4}} \frac{\cot g^2 x - \tan^2 x}{\cos^2 2x}$$

$$39) \lim_{x \rightarrow \pi} \cot g \pi x \cdot \tan x$$

$$40) \lim_{x \rightarrow 0} \frac{1 - \cos^3 x}{\sin^2 x}$$

$$41) \lim_{x \rightarrow +\infty} \cos x \cdot \sin \frac{1}{x}$$

$$42) \lim_{x \rightarrow 0} x \cdot \text{Arc tan} \frac{1}{x}$$

$$43) \lim_{x \rightarrow \pi} \frac{\tan^2 x - \sin^2 x}{\cot g^2 \frac{x}{2} - \cos^2 \frac{x}{2}}$$

$$44) \lim_{x \rightarrow \frac{\pi}{4}} \frac{\cot g\left(\frac{\pi}{2} + 2x\right)}{4x - \pi}$$

$$45) \lim_{x \rightarrow \frac{\pi}{2}} \frac{\sqrt{1 - \sin x}}{1 - \sqrt{\sin x}}$$

$$46) \lim_{x \rightarrow 0^+} \frac{\text{Arc cos } x}{\text{Arc tan } x - \text{Arc sin } x}$$

$$48) \lim_{x \rightarrow \frac{\pi}{4}} \frac{\cos 2x}{\sin x - \cos x}$$

$$47) \lim_{x \rightarrow \frac{\pi}{2}} \frac{\sqrt{1 - \sin x}}{\sin \frac{x}{2} - \cos \frac{x}{2}}$$