

LIMESI

neodređeni oblici : $\frac{0}{0}, \frac{\infty}{\infty}, \infty - \infty, 0 \cdot \infty, 0^0, \infty^0, 1^\infty$

Osnovna pravila za limese :

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| <p>1. $\lim_{x \rightarrow c} [f(x) \pm g(x)] = \lim_{x \rightarrow c} f(x) \pm \lim_{x \rightarrow c} g(x)$</p> <p>2. $\lim_{x \rightarrow c} [f(x) \cdot g(x)] = \lim_{x \rightarrow c} f(x) \cdot \lim_{x \rightarrow c} g(x)$</p> <p>3. $\lim_{x \rightarrow c} \alpha \cdot f(x) = \alpha \cdot \lim_{x \rightarrow c} f(x)$</p> <p>4. $\lim_{x \rightarrow c} \alpha = \alpha$</p> <p>5. $\lim_{x \rightarrow c} \frac{f(x)}{g(x)} = \frac{\lim_{x \rightarrow c} f(x)}{\lim_{x \rightarrow c} g(x)}$</p> | <p>6. $\lim_{x \rightarrow c} [\ln f(x)] = \ln \lim_{x \rightarrow c} f(x)$</p> <p>7. $\lim_{x \rightarrow c} \sqrt[n]{f(x)} = \sqrt[n]{\lim_{x \rightarrow c} f(x)}$</p> <p>8. $\lim_{x \rightarrow c} \alpha^{f(x)} = \alpha^{\lim_{x \rightarrow c} f(x)}$</p> <p>9. $\lim_{x \rightarrow c} [f(x)^{g(x)}] = \lim_{x \rightarrow c} f(x)^{\lim_{x \rightarrow c} g(x)}$</p> <p>10. $\lim_{x \rightarrow c} f[g(x)] = f \cdot \lim_{x \rightarrow c} g(x)$</p> |
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TABLICNI LIMESI

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| <p>1. $\lim_{x \rightarrow \infty} \frac{a}{x} = 0$</p> <p>2. $\lim_{x \rightarrow 0} \frac{a}{x} = \infty$</p> <p>3. $\lim_{x \rightarrow 0} a^x = 1$</p> <p>4. $\lim_{x \rightarrow \infty} \sqrt[x]{a} = 1$</p> <p>5. $\lim_{x \rightarrow \infty} \sqrt[x]{x} = 1$</p> <p>6. $\lim_{x \rightarrow \infty} \frac{\alpha^x}{x!} = 0$</p> <p>7. $\lim_{x \rightarrow \infty} x^n \alpha^x = 0$ za $\alpha < 1$</p> <p>8. $\lim_{x \rightarrow \infty} \frac{x^n}{e^{ax}} = 0$ za $a > 0$</p> <p>9. $\lim_{x \rightarrow \infty} \frac{\ln^n x}{x^a} = 0$ $a > 0$</p> <p>10. $\lim_{x \rightarrow \infty} \sqrt[x]{\frac{1}{x!}} = 0$</p> <p>11. $\lim_{x \rightarrow \infty} \sqrt[x]{\frac{x!}{x}} = \frac{1}{e}$</p> <p>12. $\lim_{x \rightarrow \infty} \frac{a^x}{1+a^x} = \begin{cases} 0 & \text{za } 0 < a < 1 \\ \frac{1}{2} & \text{za } a = 1 \\ 1 & \text{za } a > 1 \end{cases}$</p> <p>13. $\lim_{x \rightarrow 0} \frac{a^x - 1}{x} = \ln a$</p> <p>14. $\lim_{x \rightarrow 0} \frac{e^x - 1}{x} = 1$</p> <p>15. $\lim_{x \rightarrow \infty} \left(\frac{a}{b}\right)^x = \begin{cases} \infty & \text{za } a > b \\ \text{neodr.} & \text{za } a = b \\ 0 & \text{za } a < b \end{cases}$</p> | <p>16. $\lim_{x \rightarrow 0} \frac{\ln(1+kx)}{x} = k$</p> <p>17. $\lim_{x \rightarrow 0} \frac{(1+x)^n - 1}{x} = n$</p> <p>18. $\lim_{x \rightarrow \infty} \alpha ^x = \begin{cases} 0 & \alpha < 1 \\ \text{neodr.} & \alpha = 1 \\ \infty & \alpha > 1 \end{cases}$</p> <p>19. $\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$</p> <p>20. $\lim_{x \rightarrow 0} \frac{\sin ax}{ax} = 1$</p> <p>21. $\lim_{x \rightarrow 0} \frac{\sin^m ax}{(ax)^m} = 1$</p> <p>22. $\lim_{x \rightarrow \pm\infty} \frac{\sin x}{x} = 0$</p> <p>23. $\lim_{x \rightarrow \infty} \left(1 + \frac{1}{x}\right)^x = e$</p> <p>24. $\lim_{x \rightarrow 0} (1+x)^{\frac{1}{x}} = e$</p> <p>25. $\lim_{x \rightarrow \infty} \left(1 + \frac{a}{x}\right)^x = e^a$</p> <p>26. $\lim_{x \rightarrow \infty} (1+ax)^{\frac{1}{x}} = e^a$</p> <p>27. $\lim_{x \rightarrow 0} \sin x = 0$</p> <p>28. $\lim_{x \rightarrow 0} \cos x = 1$</p> <p>29. $\lim_{x \rightarrow \infty} (1+a^x)^{\frac{1}{x}} = a$</p> <p>30. $\lim_{x \rightarrow 0} x^x = 1$</p> |
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Obrt za poduke "Sinti & Sinti"

VI. Fulvio Sinti

Erazma Barčiča 9, Rijeka

Mob: 095/8066-444

Mail: fulvio@sinti-poduke.hr

Web: www.sinti-poduke.hr

