

Matematika 2 - geo & zoo

8. zadaća

Izračunati:

1. $\lim_{x \rightarrow 0} \frac{3x^2 + 2x - 1}{2x^2 - x + 1}$
2. $\lim_{x \rightarrow \sqrt{3}} \frac{x^2 - 3}{x^4 + x^2 + 1}$
3. $\lim_{x \rightarrow 1} \frac{x}{x^2 - 1}$
4. $\lim_{x \rightarrow -2} \frac{x^2 - 4}{x + 2}$
5. $\lim_{x \rightarrow 2} \frac{4 - x^2}{x^2 - 2x}$
6. $\lim_{x \rightarrow 4} \frac{x^2 - 4x}{x^2 - x - 12}$
7. $\lim_{x \rightarrow -3} \frac{x^2 + x - 6}{2x^2 + 9x + 9}$
8. $\lim_{x \rightarrow 5} \frac{3x^2 - 13x - 10}{4x^2 - 14x - 30}$
9. $\lim_{x \rightarrow 2} \frac{x^3 - 2x^2 - 4x + 8}{x^4 - 2x^3 - 8x + 16}$
10. $\lim_{x \rightarrow 1} \left(\frac{1}{x-1} - \frac{2}{x^2-1} \right)$
11. $\lim_{x \rightarrow 2} \left(\frac{1}{x-2} - \frac{12}{x^3-8} \right)$
12. $\lim_{x \rightarrow 2} \left(\frac{1}{x(x-2)^2} - \frac{1}{x^2-3x+2} \right)$
13. $\lim_{x \rightarrow \infty} \frac{(x+1)^2}{x^2+1}$
14. $\lim_{x \rightarrow \infty} \frac{1+x-3x^3}{1+x^2+3x^3}$
15. $\lim_{x \rightarrow \infty} \left(\frac{x^3}{x^2+1} - x \right)$

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9. zadaća

1. Funkcija $f : \mathbb{R} \setminus \{1\} \rightarrow \mathbb{R}$ je zadana sa

$$f(x) = \frac{x^2 - x^3}{x^3 - 1}.$$

Proširiti funkciju f do neprekidne funkcije $\tilde{f} : \mathbb{R} \rightarrow \mathbb{R}$.

Izračunati:

2. $\lim_{x \rightarrow 16} \frac{\sqrt{x}-4}{x-16}$
3. $\lim_{x \rightarrow 1} \frac{\sqrt[3]{x}-1}{\sqrt[4]{x}-1}$
4. $\lim_{x \rightarrow 3} \frac{\sqrt{x+6}-x}{x-3}$
5. $\lim_{x \rightarrow 7} \frac{2-\sqrt{x-3}}{x^2-49}$
6. $\lim_{x \rightarrow 0} \frac{\sqrt{1+x^2}-1}{x}$
7. $\lim_{x \rightarrow 0} \frac{\sqrt{1+x}-1}{x^2}$
8. $\lim_{x \rightarrow 5} \frac{\sqrt{x-1}-2}{x-5}$
9. $\lim_{x \rightarrow 1} \frac{x^2-\sqrt{x}}{\sqrt{x}-1}$
10. $\lim_{x \rightarrow \infty} \frac{\sqrt[3]{x^4+3}-\sqrt[5]{x^3+4}}{\sqrt[3]{x^7+1}}$
11. $\lim_{x \rightarrow \infty} (\sqrt{x+9} - x)$
12. $\lim_{x \rightarrow \infty} \frac{3^x-3^{-x}}{3^x+3^{-x}}$
13. $\lim_{x \rightarrow 0} \frac{\sin 3x}{4x}$
14. $\lim_{x \rightarrow 0} \frac{\operatorname{tg} 2x}{\sin 5x}$
15. $\lim_{x \rightarrow \infty} \frac{\operatorname{arctg} x}{x}$