

Sorozatok – Határérték – Formálisan

I. a. rész

1. $\lim_{n \rightarrow \infty} n^2$, 2. $\lim_{n \rightarrow \infty} \frac{3}{\sqrt{n}}$, 3. $\lim_{n \rightarrow \infty} \left(\frac{1}{n} - \frac{3}{2n^2} \right)$, 4. $\lim_{n \rightarrow \infty} \left(2n + \sqrt[3]{3n^2} \right)$,
5. $\lim_{n \rightarrow \infty} \frac{2n+3}{3n-5}$, 6. $\lim_{n \rightarrow \infty} \frac{n^2}{n^2-4}$, 7. $\lim_{n \rightarrow \infty} \frac{n+1}{n^2-5}$, 8. $\lim_{n \rightarrow \infty} \frac{n^2+n-1}{2-n}$,
9. $\lim_{n \rightarrow \infty} \frac{\sqrt{n+3}}{n^2-5}$, 10. $\lim_{n \rightarrow \infty} \frac{\sqrt[3]{n^2+5}}{\sqrt{n^3+1}}$,

I. b. rész

11. $\lim_{n \rightarrow \infty} (n - \sqrt{2n+3})$, 12. $\lim_{n \rightarrow \infty} (\sqrt{n} - \sqrt{2n+3})$,
13. $\lim_{n \rightarrow \infty} (\sqrt{n} - \sqrt{n+3})$, 14. $\lim_{n \rightarrow \infty} (\sqrt{n^2-1} - \sqrt{n^2-n+1})$.

II. rész

1. $\lim_{n \rightarrow \infty} (2^n - n^4)$, 2. $\lim_{n \rightarrow \infty} \frac{n^2-5n}{2^n-n^3}$, 3. $\lim_{n \rightarrow \infty} \frac{3^n+n}{2^n-n^2}$,
4. $\lim_{n \rightarrow \infty} \frac{3^n n^2}{8^n}$, 5. $\lim_{n \rightarrow \infty} \left(\frac{3}{2} \right)^{2n-1}$, 6. $\lim_{n \rightarrow \infty} \frac{2^n+1}{n!+n^2-4}$,
7. $\lim_{n \rightarrow \infty} \left(\sqrt[n]{5} - \sqrt[n]{n^2} \right)$, 8. $\lim_{n \rightarrow \infty} \frac{\sqrt[n]{4} - \sqrt[n]{2}}{\sqrt[n]{2} - 1}$, 9. $\lim_{n \rightarrow \infty} \frac{\sqrt[n]{3} - 1}{\sqrt[n]{27} - \sqrt[n]{9}}$,
10. $\lim_{n \rightarrow \infty} \sqrt[n]{n^2+5n-3}$, 11. $\lim_{n \rightarrow \infty} \sqrt[n]{3^n-n^2}$, 12. $\lim_{n \rightarrow \infty} \sqrt[n]{2^{3n-1}-3^n n}$.

III. rész

1. $\lim_{n \rightarrow \infty} \left(\frac{2n+1}{n+3} \right)^{\frac{2n-1}{5n-3}}$, 2. $\lim_{n \rightarrow \infty} \left(\frac{n^2-1}{2n^2+3} \right)^{\frac{\sqrt{n-1}}{3\sqrt{n-3}}}$, 3. $\lim_{n \rightarrow \infty} \left(\frac{n+5}{n+3} \right)^{\frac{n+2}{3n+5}}$,
4. $\lim_{n \rightarrow \infty} \left(\frac{2n+1}{n+3} \right)^{n+1}$, 5. $\lim_{n \rightarrow \infty} \left(\frac{n^2-1}{2n^2+3} \right)^{2n-1}$, 6. $\lim_{n \rightarrow \infty} \left(\frac{2n-1}{3n+1} \right)^{1-n}$.

IV. rész

1. $\lim_{n \rightarrow \infty} \left(\frac{n+5}{n+3} \right)^{n+2}$, 2. $\lim_{n \rightarrow \infty} \left(\frac{n+3}{n+5} \right)^{n+2}$, 3. $\lim_{n \rightarrow \infty} \left(\frac{2n^2-1}{2n^2+n+1} \right)^{2-n}$.