

Sorozatok – Határérték – Definíció szerint

I. rész

$$1. \lim_{n \rightarrow \infty} \frac{1}{2n-7} = 0, \quad 2. \lim_{n \rightarrow \infty} \frac{2n-1}{3n+2} = \frac{2}{3}, \quad 3. \lim_{n \rightarrow \infty} \frac{2-3n}{n-5} = -3, \quad 4. \lim_{n \rightarrow \infty} \frac{n^2+3n}{2n^2-5} = \frac{1}{2}.$$

II. rész

$$1. \lim_{n \rightarrow \infty} \frac{n^2+3n}{2n-5} = \infty, \quad 2. \lim_{n \rightarrow \infty} \frac{n^2-3n}{5-2n} = -\infty.$$

Sorozatok – Határérték – Formálisan

I. rész

$$1. \lim_{n \rightarrow \infty} n^2, \quad 2. \lim_{n \rightarrow \infty} \frac{3}{\sqrt{n}}, \quad 3. \lim_{n \rightarrow \infty} \left(\frac{1}{n} - \frac{3}{2n^2} \right), \quad 4. \lim_{n \rightarrow \infty} \left(2n + \sqrt[3]{3n^2} \right),$$
$$5. \lim_{n \rightarrow \infty} \frac{2n+3}{3n-5}, \quad 6. \lim_{n \rightarrow \infty} \frac{n^2}{n^2-4}, \quad 7. \lim_{n \rightarrow \infty} \frac{n+1}{n^2-5}, \quad 8. \lim_{n \rightarrow \infty} \frac{n^2+n-1}{2-n},$$
$$9. \lim_{n \rightarrow \infty} \frac{\sqrt{n+3}}{n^2-5}, \quad 10. \lim_{n \rightarrow \infty} \frac{\sqrt[3]{n^2+5}}{\sqrt{n^3+1}},$$
$$11. \lim_{n \rightarrow \infty} (n - \sqrt{2n+3}), \quad 12. \lim_{n \rightarrow \infty} (\sqrt{n} - \sqrt{2n+3}),$$
$$13. \lim_{n \rightarrow \infty} (\sqrt{n} - \sqrt{n+3}), \quad 14. \lim_{n \rightarrow \infty} (\sqrt{n^2-1} - \sqrt{n^2-n+1}).$$

II. rész

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

III. rész

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

IV. rész

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