Gazdálkodási szak
Matematika tantárgy t/2 konzultáció
Összeállította: Marton Lászlóné

1. Határozza meg a határértéket és $\varepsilon = \frac{1}{100}$ hoz adja meg a küszöbértéket az alábbi sorozatoknál:

$$a_n = \frac{n+4}{2n+3},\ a_n = \frac{3n-1}{n+2},\ a_n = \frac{4n+1}{3-5n},\ a_n = \frac{6-2n}{n+3},\ a_n = \frac{n+4}{-2n+3}.$$

2. Határozza meg az alábbi sorozatok határértékét:

A,

$$a_n = 3n+2,\ a_n = 5n^2-7n+1,\ a_n = -6n^2+7n+1,\ a_n = -2n^4+3n^2+9.$$

B,

$$a_n = \frac{7n+4}{2n+3},\ a_n = \frac{n^2+4n-2}{2n^2+3n},\ a_n = \frac{2n^3+n-3}{7n^3+3n^2-n},\ a_n = \frac{5n^4+n^3-6}{-n^4+7n^3+8n},$$

$$a_n = \frac{7n+4}{2n^2+3},\ a_n = \frac{n^2+4n}{2n^4+3n},\ a_n = \frac{2n^3+n-3}{7n^5+3n^2-n},\ a_n = \frac{n^2+3n-6}{-n^4+7n^3+8n},$$

$$a_n = \frac{n^3+4}{2n},\ a_n = \frac{n^3+4n^2}{2n^2+3n},\ a_n = \frac{-2n^4+n^2-3}{n^3+n^2-n},\ a_n = \frac{n^5+n^3-6}{-n^4+7n^3+8n}\ .$$

C,

$$a_n = \frac{n+\sqrt{4n^2+3n+2}}{5n+3},\ a_n = \frac{n+\sqrt{4n^2+3n+2}}{2n^2+3n},\ a_n = \frac{n+\sqrt{9n^2+3n}}{n^3+n},\ a_n = \frac{n^2+\sqrt{4n^2+3n+2}}{-n+7},$$

$$a_n = \sqrt{3n^2+2n-1}-\sqrt{3n^2-5n+3},\ a_n = \sqrt{4n^2+2n-1}-\sqrt{3n^2-n+3},\ a_n = \sqrt{n^2+2n-1}-\sqrt{4n^2+n+7}.$$

D,

$$a_n = \sqrt[n]{3},\ a_n = \sqrt[n]{0,5},\ a_n = \sqrt[n]{3n},\ a_n = \sqrt[n]{\frac{2n}{5}},\ a_n = \sqrt[n]{n}, a_n = \sqrt[n]{n^3}, a_n = \sqrt[n]{n+3},$$

$$a_n = (3)^n,\ a_n = (-2)^n,\ a_n = \left(\frac{4}{5}\right)^n,\ a_n = \left(\frac{-2}{3}\right)^n,\ a_n = \left(\frac{-4}{3}\right)^n, a_n = \left(1+\frac{1}{3}\right)^n, a_n = \left(1+\frac{1}{n}\right)^n, a_n = \left(1+\frac{1}{3}\right)^4,$$

$$a_n = \left(1+\frac{2}{n}\right)^n,\ a_n = \left(1+\frac{4}{n}\right)^n,\ a_n = \left(1+\frac{-2}{n}\right)^n,\ a_n = \left(1+\frac{1}{n}\right)^{n+2}, a_n = \left(1+\frac{1}{2n}\right)^n, a_n = \left(1+\frac{1}{2n+3}\right)^n, a_n = \left(\frac{n+4}{n+6}\right)^n,$$

$$a_n = \left(\frac{2n+3}{2n+5}\right)^n,\ a_n = \left(\frac{n-4}{n+1}\right)^{2n+1},\ a_n = \left(\frac{n-2}{n+3}\right)^{n-4},\ a_n = \left(\frac{3n}{3n+5}\right)^{4n+2}.$$