FISA 2
SERII DE NUMERE REALE

EXERCITIUL 1. Să se studieze natura următoareleor seri de numere reale:

a) $\sum\limits_{n\geq 0} \frac{1}{\sqrt[3]{n}+\sqrt[3]{n+1}}$

b) $\sum\limits_{n\geq 1} \frac{na^n}{n+1}$, unde $a \in \mathbb{R}$

c) $\sum\limits_{n\geq 0} 2^n \sin\frac{\pi}{5^n}$

d) $\sum\limits_{n\geq 0} \left(\sqrt{n^4+2n+1}-n^2\right)$

e) $\sum\limits_{n\geq 1} \frac{a^n}{n}$, unde $a \in \mathbb{R}$

f) $\sum\limits_{n\geq 1} \frac{a^n}{\sqrt[n]{n!}}$, unde $a > 0$

h) $\sum\limits_{n\geq 1} \frac{\sqrt{n!}}{\left(3+\sqrt{1}\right)\left(3+\sqrt{2}\right)\cdots\cdots\left(3+\sqrt{n}\right)}$

i) $\sum\limits_{n\geq 2} \frac{1}{n^\alpha \ln n}$, unde $\alpha > 0$

j) $\sum\limits_{n\geq 0} \frac{(-1)^n}{\sqrt{n}+\sqrt{2n+1}}$

k) $\sum\limits_{n\geq 1} \frac{\sin n}{n}$

l) $\sum\limits_{n\geq 1} \frac{\sin\frac{1}{n}\sin n}{n}$

m) $\sum\limits_{n\geq 0} \frac{\sqrt{n}}{n^2+4n+6}$

n) $\sum\limits_{n\geq 0} a^{-n^2}$, unde $a > 0$

o) $\sum\limits_{n\geq 1} \frac{a^n}{\sqrt{n!}}$, unde $a > 0$.