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Конвергентни низови

1211. б) $\lim\limits_{n\to\infty} \frac{(n+2)!-(n+1)!}{(n+3)!} = \lim\limits_{n\to\infty} \frac{(n+2)(n+1)!-(n+1)!}{(n+3)(n+2)\cdot(n+1)!} =$

$= \lim\limits_{n\to\infty} \frac{\cancel{(n+1)!}\,(n+2-1)}{\cancel{(n+1)!}\,(n^2+5n+6)} = \lim\limits_{n\to\infty} \frac{n+1}{n^2+5n+6} =$

$= \lim\limits_{n\to\infty} \frac{\cancel{\frac{1}{n}}^{\to 0}+\cancel{\frac{1}{n^2}}^{\to 0}}{1+\cancel{\frac{5}{n}}^{\to 0}+\cancel{\frac{6}{n^2}}^{\to 0}} = \frac{0}{1} = 0$

1212. а) $\lim\limits_{n\to\infty} \frac{2^n-1}{2^n+1} = \lim\limits_{n\to\infty} \frac{1-\cancel{\frac{1}{2^n}}^{\to 0}}{1+\cancel{\frac{1}{2^n}}^{\to 0}} = \frac{1}{1} = 1$

1215. $\lim\limits_{n\to\infty} \left(1-\frac{1}{4}\right)\left(1-\frac{1}{9}\right)\cdots\left(1-\frac{1}{n^2}\right) = \lim\limits_{n\to\infty} \frac{n+1}{2n} =$

$= \lim\limits_{n\to\infty} \frac{1+\cancel{\frac{1}{n}}^{\to 0}}{\frac{2\cancel{n}}{\cancel{n}}} = \boxed{\frac{1}{2}}$ ПОГЛЕДАТИ ЗАДАТАК 1083.

Домаћи: 1208 1212 б)