Provare che la successione di termine generale

- $a_n = \dfrac{2n+1}{3n-1}$ è decrescente per $n \geq 1$

$a_n = \dfrac{3n-2}{2n-1}$ è crescente per $n \geq 1$

$a_n = \dfrac{n+1}{n^2+1}$ è decrescente per $n \geq 1$

Calcolare i limiti delle seguenti successioni

$\lim\limits_{n \to +\infty} \dfrac{5n-1}{2+3n} = \dfrac{5}{3}$; • $\lim\limits_{n \to +\infty} \dfrac{3n^2+5n+1}{5n^2+2n+7} = \dfrac{3}{5}$

• $\lim\limits_{n \to +\infty} \dfrac{n^2+3}{n^3+2n+5} = 0$; • $\lim\limits_{n \to +\infty} \dfrac{n^4-5n+2}{n^2-n^3+1} = -\infty$

$\lim\limits_{n \to +\infty} \dfrac{1+2+3+\dots+n}{n^2} = \dfrac{1}{2}$, $\lim\limits_{n \to +\infty} \left(\dfrac{3n+5}{2n+1}\right)^3 = \dfrac{27}{8}$

$\lim\limits_{n + \infty} \left(\sqrt{n+2} - \sqrt{n}\right) = 0$; $\lim\limits_{n \to +\infty} \left(\sqrt{n^2+n} - n\right) = \dfrac{1}{2}$

$\lim\limits_{n \to +\infty} n\left(\sqrt{n^2+2} - n\right) = 1$, $\lim\limits_{n \to +\infty} \left(\dfrac{1}{n} + \dfrac{2}{n} + \dfrac{3}{n} + \dots + \dfrac{n-1}{n} + 1\right) =+$

$\lim\limits_{n \to +\infty} \dfrac{n^2+5}{n\sqrt{n}} = +\infty$; $\lim\limits_{n \to +\infty} \sqrt[n]{2} = 1$

$\lim\limits_{n \to +\infty} \dfrac{10^{10}\, n}{1+n^2} = 0$; $\lim\limits_{n \to +\infty} \dfrac{n+(-1)^n \cdot n}{n+1} \nexists$