Limiti 1

Argomenti: limiti di successioni **Difficoltà**: ⋆⋆

Prerequisiti: teoremi algebrici e di confronto

Calcolare i limiti delle seguenti successioni.

Successione	Limite	Successione	Limite	Successione	Limite
n^4+n^3	+ inf	n^4-n^3	+inf	n^4-n^5	- inf
$2n^2-3n^3+25$	- inf	$10\sqrt{n}+32-n$	- inf	$n+2n\sqrt{n}-\sqrt[3]{n^4}$	+ inf
$\frac{7-n}{1+n^2}$	0	$\frac{7-n^2}{1+n^2}$	-1	$\frac{7-n^3}{1+n^2}$	- inf
$\frac{n^3+3n^2+2}{1-5n+3n^3}$	1/3	$\frac{n^3+3n^4+2}{1-5n+3n^3}$	+ inf	$\frac{n+3n^2+2}{1-5n+3n^3}$	0
$\frac{n\sqrt{n}+2n}{n+\sqrt{n^3}}$	1	$\frac{n+2\sqrt{n}}{3n+4\sqrt{n}}$	1/3	$\frac{\sqrt{2n}+\sqrt[3]{3n}}{\sqrt{2n}+\sqrt[3]{7n}}$	1
$\frac{\sqrt[4]{n}-\sqrt[5]{n}}{\sqrt[5]{n}-\sqrt[7]{n}}$	+ inf	$\frac{\sqrt[4]{n}-n\sqrt[5]{n}}{\sqrt[5]{n}-n\sqrt[7]{n}}$	- inf	$\frac{\sqrt[4]{n}-\sqrt[5]{n}}{\sqrt[5]{n}-\sqrt[7]{n^2}}$	0
$n+\frac{n^2+n}{n+3}$	+ inf	$n-\frac{n^2+n}{n+3}$	2	$\frac{n^2}{n+1}-\frac{n^3}{n^2+1}$	-1
$n+\sin n$	+ inf	$n-\sin n$	+ inf	$n-\sqrt{n}\cos n^2$	+ inf
$\frac{\sin n}{n}$	0	$\frac{\sin n^3}{\sqrt{n}}$	0	$\frac{\cos n!}{n^2}$	0
$\frac{2+\sin n}{n}$	0	$\frac{2+\sin n^2}{n}$	0	$n(2+\sin n)$	+ inf
$\frac{\cos n+n^2}{n+\arctan n^2}$	+ inf	$\frac{\cos n^2+n}{n^2+\arctan n}$	0	$\frac{\cos n^2+n}{n+\arctan n^2}$	1
$\frac{n\sin n^2+n^2\sin n}{(n+1)(n+\sqrt{n^3})}$	0	$\frac{\sin\sqrt[3]{n}-\cos\sqrt[4]{n}}{\sqrt[5]{n}-\sqrt[6]{n}}$	0	$\frac{\cos n+n}{\arctan n+n}$	1
$n\left(\pi-\arcsin\frac{1}{n}\right)$	+inf	$\frac{\sqrt[3]{n}-\sqrt{n}}{2+\sin n^2}$	- inf	$\frac{\sqrt{n}}{7+(-1)^n\sin n}$	indeterminata (?)

Success.	Limite	Success.	Limite	Success.	Limite	Success.	Limite
$\frac{3^n}{n^3}$	+inf	$\frac{3^n}{n!}$	0	$\frac{n!}{n^n}$	0	$\frac{3^{n^2}}{n^n}$	+inf
$\frac{n! \cdot 2^n}{n^n}$	0	$\frac{n! \cdot 3^n}{n^n}$	0	$\frac{n! \cdot 3^n}{n^{2n}}$	0	$\frac{n^{n^2}}{3^{n^3}}$	0
$\frac{(n!)^2}{n^n}$	+ inf	$\frac{(2n)!}{n^n}$	+inf ??	$\frac{(n!)^2}{(2n)!}$	?	$\frac{(2n)!}{3^{n^2}}$	
$\sqrt[n]{n}$	1	$\sqrt[n]{n!}$	+ inf	$\binom{3n}{n}$	+ inf	$\sqrt[n]{\binom{3n}{n}}$	27/4
$\frac{\sqrt[n]{n!}}{n}$	1/e	$\frac{\sqrt[n]{(2n)!}}{n^2}$	0 ?	$\frac{1}{n}\sqrt[n]{\frac{(2n)!}{n!}}$		$\frac{(2n)!}{n^{3n}}$	

Successione	Limite	Successione	Limite	Successione	Limite
$2^n - n^2$	+inf	$3^n - n!$	-inf	$n^2 - n! + n^n$	+inf
$\frac{2^n + 5^n}{3^n + 4^n}$	+inf	$\frac{n^3 + 2^n}{n^2 + 3^n}$	0	$\frac{2^n - n!}{n! + n^{22}}$	-1