

### Esercizi su limiti di successioni - 1

Calcolare i seguenti limiti di successioni.

1.  $\lim_{n \rightarrow +\infty} \frac{n^3 - 5n^4 + 1}{n^3 + n^2}$

2.  $\lim_{n \rightarrow +\infty} \frac{(n+1)^2 - n^2}{n + 3\sqrt{n}}$

3.  $\lim_{n \rightarrow +\infty} \frac{\sqrt{3n+2} - \sqrt[3]{n}}{\sqrt[4]{n}}$

4.  $\lim_{n \rightarrow +\infty} \frac{5n + 6(2-n)^3 + 2\sqrt[3]{n^4 + 4}}{\sqrt{n^6 + 3n}}$

5.  $\lim_{n \rightarrow +\infty} \frac{1}{\frac{1}{n^2} - \frac{1}{n}}$

6.  $\lim_{n \rightarrow +\infty} \sqrt{\log_2 \left( \frac{3n^2 + n + 3}{n^2 - 1} \right)}$

7.  $\lim_{n \rightarrow +\infty} \sqrt[5]{1 - \log_4(n^2 - n)}$

8.  $\lim_{n \rightarrow +\infty} \left( \sqrt{n+1} - \sqrt{n} \right) \sqrt{\frac{5n^2 - 2}{2n + 3}}$

9.  $\lim_{n \rightarrow +\infty} \frac{\sqrt{n^2 + 2n} - \sqrt{1 + n^2}}{n}$

10.  $\lim_{n \rightarrow +\infty} \frac{\sqrt[3]{2n + n^3} - n}{\sqrt{n}}$

11.  $\lim_{n \rightarrow +\infty} \frac{\sqrt[3]{2n + n^3} - 4n}{\sqrt{n}}$

12.  $\lim_{n \rightarrow +\infty} \left( \sqrt{\frac{4n^3 + 1}{n + 1}} - 2n \right)$

13.  $\lim_{n \rightarrow +\infty} \frac{\log_3 n}{\sqrt{\log_3(n^2 + 5)}}$

14.  $\lim_{n \rightarrow +\infty} \frac{n + 2 - \sqrt{n^2 + n}}{\log_3(8n - \sqrt{n + 3})}$