

Esercizio del 03/10/2014

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

$$\lim_{n \rightarrow +\infty} \frac{n^5 + \sqrt[7]{n} - \log n}{3n^3 \cdot \sqrt{(n+5)^2}};$$

$$\lim_{n \rightarrow +\infty} \frac{n^5}{e^n};$$

$$\lim_{n \rightarrow +\infty} \frac{n!}{e^n};$$

$$\lim_{n \rightarrow +\infty} \frac{5^n}{n!};$$

$$\lim_{n \rightarrow +\infty} \frac{n^7}{n!}.$$

(ii) Risolvere le seguenti disequazioni

$$\frac{|x-5|+2}{|x|-3} < \text{sgn } x;$$

$$\sqrt{|x-2|-1} \leq \text{sgn } x.$$