

Analisi Matematica 1 - Lista n. 7

Il numero **e**

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Calcolare i seguenti limiti:

$$1) \lim_{n \rightarrow +\infty} \left(1 + \frac{2}{n}\right)^n$$

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

$$3) \lim_{n \rightarrow +\infty} \left(1 + \frac{1}{n^2}\right)^n$$

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

$$5) \lim_{n \rightarrow +\infty} \left(1 + \frac{1}{n}\right)^{n^2}$$

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

$$7) \lim_{n \rightarrow +\infty} \left(1 + \frac{1}{n+2}\right)^n$$

$$8) \lim_{n \rightarrow +\infty} \left(1 - \frac{1}{n + \frac{1}{n}}\right)^{n+1}$$

$$9) \lim_{n \rightarrow +\infty} \left(1 + \frac{1}{n^2}\right)^{n^4}$$

$$10) \lim_{n \rightarrow +\infty} \left(1 - \frac{1}{n^3}\right)^{n^2}$$

$$11) \lim_{n \rightarrow +\infty} \left(1 + \frac{1}{n^2}\right)^{2n^2+5}$$

$$12) \lim_{n \rightarrow +\infty} \left(1 + \frac{7}{n}\right)^{\frac{3n^2+5}{4n+1}}$$

$$13) \lim_{n \rightarrow +\infty} \left(1 - \frac{1}{n^2}\right)^{\frac{n^4+n+1}{n^2+7}}$$

$$14) \lim_{n \rightarrow +\infty} \left(\frac{n+9}{n+5}\right)^{3n}$$

$$15) \lim_{n \rightarrow +\infty} \left(\frac{n+5}{n+8}\right)^{\frac{n}{4}}$$

$$16) \lim_{n \rightarrow +\infty} \left(\frac{n^2+2n+8}{n^2-3n+7}\right)^n$$

$$17) \lim_{n \rightarrow +\infty} \left(\frac{n^2+n-6}{n^2+n+7}\right)^n$$

$$18) \lim_{n \rightarrow +\infty} \left(\frac{n^2-2n+1}{n^2-4n+7}\right)^{\frac{n^4-n+3}{2n^2+5}}$$

$$19) \lim_{n \rightarrow +\infty} \left(\frac{n^2-n-6}{n^2-n+2}\right)^{\frac{n^4+n+3}{n^2-1}}$$

$$20) \lim_{n \rightarrow +\infty} \left(1 + \log_n 2\right)^{\ln n}$$

$$21) \lim_{n \rightarrow +\infty} \left(1 + \frac{1}{n!}\right)^{n^n}$$

$$22) \lim_{n \rightarrow +\infty} \left(1 + \frac{1}{n^n}\right)^{(n+1)^n}$$

$$23) \lim_{n \rightarrow +\infty} \frac{e^n}{\left(1 + \frac{1}{n^2}\right)^{n^3}}$$

$$24) \lim_{n \rightarrow +\infty} \frac{e^{n^2}}{\left(1 + \frac{1}{n}\right)^{n^3}}$$