

CALCOLARE I SEGUENTI LIMITI

$$1. \lim_{x \rightarrow 0} \frac{\operatorname{sen} x}{\log(1+2x)}$$

$$2. \lim_{x \rightarrow 0} \frac{e^{\operatorname{sen} x} - 1}{x + 2x^2}$$

$$3. \lim_{x \rightarrow 0} \left(1 + \frac{1}{\operatorname{sen} x}\right)^x$$

$$4. \lim_{x \rightarrow 0} (\cos x)^{\frac{1}{\operatorname{sen}^2 x}}$$

$$5. \lim_{x \rightarrow \frac{\pi}{2}} \frac{1 - \operatorname{sen} x}{\cos x}$$

$$6. \lim_{x \rightarrow +\infty} e^x - \log x$$

$$7. \lim_{x \rightarrow 0^+} \operatorname{sen} x \cdot \log x$$

$$8. \lim_{x \rightarrow +\infty} e^x - x^{\log x}$$

$$9. \lim_{x \rightarrow +\infty} \frac{2^{\sqrt{x}} - x}{x^5 + \cos x}$$

$$10. \lim_{x \rightarrow +\infty} \frac{\log(e^x - x^2)}{x}$$

$$11. \lim_{x \rightarrow 0} \frac{x \operatorname{sen}(e^{x^2} - 1)}{\operatorname{sen}^3 x}$$

$$12. \lim_{x \rightarrow +\infty} x \left( e^{\frac{1}{x}} - \operatorname{sen} \frac{1}{x} \right)$$

$$13. \lim_{x \rightarrow +\infty} \frac{\log x + e^{\cos x}}{\sqrt{x} - \sqrt[4]{x}}$$

CALCOLARE I SEGUENTI LIMITI:

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

$$2. \lim_{x \rightarrow +\infty} \lg(\sqrt{2^x + x^2}) - x$$

$$3. \lim_{x \rightarrow \frac{\pi}{2}} \frac{\cos x (\sin x - 1)}{(x - \frac{\pi}{2})^3}$$

$$4. \lim_{x \rightarrow +\infty} \frac{x^3 + \cos x}{\lg(x^4 - x)}$$

$$5. \lim_{x \rightarrow +\infty} x^x - 2^{(2^x)}$$

$$6. \lim_{x \rightarrow 2} \frac{\lg(x^2 - 3)}{x^2 - x - 2}$$

$$7. \lim_{x \rightarrow +\infty} \lg x [\lg(x^4 + 1) - 2 \lg(x^2 - x)]$$

$$8. \lim_{x \rightarrow 0^+} (e^x - 1)^{\frac{1}{x}}$$

$$9. \lim_{x \rightarrow +\infty} x^4 \lg(\cos \frac{1}{x^2})$$

$$10. \lim_{x \rightarrow +\infty} x^2 \left( e^{\sin(\frac{1}{x^2 + \cos x})} - \cos \frac{1}{x} \right)$$

$$11. \lim_{x \rightarrow 0^+} \frac{1}{3^{\sin x}} - 2^{\frac{1}{x^2}}$$

CALCOLARE I SEGUENTI LIMITI (O LIMITE S L'INFINITO)

$$1. \lim_{x \rightarrow +\infty} \ln(3^x - x) (\ln(x^4 + 1) - 2 \ln(x^2 - x))$$

$$2. \lim_{x \rightarrow 0} 3^{\frac{1}{\sin x}} - 2^{\frac{1}{x - x^2}}$$

$$3. \lim_{x \rightarrow 2} \frac{\cos \frac{\pi}{x} (\sin \frac{\pi}{x} - 1)}{(x-2)^2 \ln(3-x)}$$

$$4. \lim_{x \rightarrow 1} \frac{(x-1) \log_{(3-x)} x - \log_2 (\cos(x-1))}{(3^x - 3)^2}$$

$$5. \lim_{x \rightarrow 0} \frac{(1-x)^{\frac{x}{2}} - \cos(x-x^3)}{\sin^2(\sin^2 x + x)}$$

$$6. \lim_{x \rightarrow 0} (\cos(2x) + 2x \sin x)^{\frac{1}{x \sin(x+x^3)}}$$

$$7. \lim_{x \rightarrow +\infty} \left( 3^{(x^2 - \cos x) \sin \frac{1}{\sqrt{x}}} - x^{x^x} \right)^{(1 - \cos \frac{1}{x})^{\sqrt{x}}}$$

$$8. \lim_{x \rightarrow 0} \frac{1}{x} - \left[ \frac{1}{x} \right], \quad \lim_{x \rightarrow 0} \frac{1}{x^2} - \left[ \frac{1}{x} \right], \quad \lim_{x \rightarrow 0} \frac{1}{x^2} \left[ \frac{1}{x} - \left[ \frac{1}{x} \right] \right]$$

$$9. \text{ DATA } f(x) = e^{-x^2 + \frac{1}{|x|}} + \sin \frac{1}{|x|+1},$$

DETERMINARE  $\text{Im}(f)$ .

ESISTONO PUNTI  $x$  T.C.  $f(x) = 0$ ? QUANTI?