CAMPI D'ESISTENZA

1. $f(x)=\left(4^x-2^{x^2}\right)^{\arcsin x^2}$
2. $f(x)=\sqrt{\sqrt{x}-\sqrt{2x-x^2}}+\ln\left(\frac{7^{x^2}}{3^x}-1\right)$
3. $f(x)=\ln\left(\sqrt{x^2-2x}-\sqrt{x-4}\right)$
4. $f(x)=\sqrt{1+\lg_{1/3}\left(x-x^2\right)}\arccos\left(x^2-1\right)$
5. $f(x)=\left(e-e^{\sin x}\right)^{\ln\cos x}+\arcsin x$
6. $f(x)=\frac{\ln(x+1)^2}{\sqrt{e^{|x-1|}-e}}$
7. $f(x)=\frac{\sqrt{\ln(x+1)^2}}{\arcsin|x-1|}$
8. $f(x)=\frac{\sqrt{e^{(x+1)^2}-1}}{\arcsin(\ln x+1)}$
9. $f(x)=\ln\left(\sqrt{x^2-x}-\sqrt{x+1}\right)$
10. $f(x)=\left(\sqrt{x^2-x}-\sqrt{x+1}\right)^{\arcsin x}$
11. $f(x)=\frac{\ln\left(x^2-6\right)}{\sqrt{e^{\arctan\left(x^2-4\right)}-e^{\pi/4}}}$
12. $f(x)=(\arcsin\ln x)\ln(2\arcsin x+\pi)$
13. $f(x)=(\pi-6\arcsin x)^{\sqrt{3}}+\ln(\cosh x-1)$

LIMITI

1. $\lim_{x\to 0}\frac{2^{\sin x}-2^x}{x\arctan x}$
2. $\lim_{x\to 0}\frac{1-\cos x}{x\sin x}$
3. $\lim_{x\to 0^+} x\ln\frac{1}{x}$
4. $\lim_{x\to 0}\frac{1-(1+\arcsin x)^{2^x}}{e^{\sin x}-1}$
5. $\lim_{x\to\infty}\sqrt{x^2+x+1}-x$
6. $\lim_{x\to 0}\frac{\sin x-\ln\cos x}{x\sin x}$
7. $\lim_{x\to 0}\frac{3^x\cos x-1}{x}$
8. $\lim_{x\to\infty} x^2\frac{2^x}{3^{x^2}}$
9. $\lim_{x\to 0}\frac{\cos 2x-\cos x}{\cos x-1}$
10. $\lim_{x\to\infty}\frac{\frac{1}{x}}{\sqrt{1+\arcsin\frac{1}{x}}-1}$
11. $\lim_{x\to\infty}\left(\sqrt{x^2+3x}-x\sqrt{\cos\frac{1}{x}}\right)$
12. $\lim_{x\to 0}\frac{\sin^2 x}{\cos x-1}$
13. $\lim_{x\to 0}\frac{1-(1+\tan x)^{\arcsin x}}{x}$
14. $\lim_{x\to 0}\frac{e^{\sin x}-e^x}{x\sin x}$

15. $\lim_{x\to 0}\dfrac{1-(1+\sin x)^{\arcsin x}}{\sin x}$

16. $\lim_{x\to 1^+} e^{\frac{1}{\ln x}}\ln x$

17. $\lim_{x\to 0}\dfrac{1-(1+\arcsin x)^{\sin x}}{e^x-1}$

18. $\lim_{x\to 0^+} e^{\frac{1}{\sin x}}\sin x$

19. $\lim_{x\to 0}\dfrac{\sqrt{x+1}-1}{x^2-x}$

20. $\lim_{x\to 0^+}\dfrac{\tan x-\ln\tan x}{x\sin x}$

21. $\lim_{x\to 0}\dfrac{\tan x-\sin x}{x^3}$

22. $\lim_{x\to 0^+}\dfrac{\sin x-\ln(1+\tan x)}{x\arctan x}$

23. $\lim_{x\to 0^+} e^{\frac{1}{\tan x}}\tan x$

24. $\lim_{x\to 0}\dfrac{\ln(1+4x)}{\arctan 2x}$

25. $\lim_{x\to 0}\dfrac{(2^x-1)(\sin x-x)}{x\arctan x}$

26. $\lim_{x\to 0^+}\dfrac{e^{\tan x}-e^x}{2^{\frac{1}{x}}x}$

27. $\lim_{x\to\infty}\sqrt{x+1}-\sqrt{x}$

28. $\lim_{x\to 0}\dfrac{\cos(e^x-e^{-x})-1}{\arctan x^2}$

29. $\lim_{x\to 0^+} e^{\frac{1}{x}}x$

30. $\lim_{x\to 0}\dfrac{(\sqrt{x+1}-1)x}{1-\cos x}$

31. $\lim_{x\to 1}\dfrac{x^3-1}{x^2-1}$

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

GRAFICO FUNZIONI

1. $f(x)=\left|\arctan x+\dfrac{\pi}{4}\right|$

2. $f(x)=\dfrac{x}{\sqrt{|1-x^2|}}$

3. $f(x)=x+\ln\left(\dfrac{x+1}{x-2}\right)$

4. $f(x)=|\arctan(x^2-1)|$

5. $f(x)=\ln\dfrac{1}{\arctan(x^2-1)}$

6. $f(x)=\left|\tan x-\dfrac{\pi}{4}\right|$

7. $f(x)=\left|\arcsin x-\dfrac{\pi}{4}\right|$

8. $f(x)=|\ln\arcsin x|$

9. $f(x)=\ln\left(\dfrac{x^2-x}{2x-1}\right)$

10. $f(x)=e^{\frac{1}{\ln x}}x$

11. $f(x)=\sqrt{\dfrac{x^3}{x-1}}$

12. $f(x)=\begin{cases}\sqrt{|x^3-x^2|} & x>-3\\ \dfrac{11}{x+1} & x\le -3\end{cases}$

13. $f(x)=\begin{cases}\sqrt[3]{x^2} & x\le -1 \vee x>2\\ \dfrac{|1-2x|}{3} & 1<x\le 2\end{cases}$

14. $f(x)=\begin{cases}e^{-x}|x-1| & x\ge 0\\ \dfrac{1}{2x+1} & -1/2<x<0\end{cases}$

15. $f(x)=\dfrac{x}{4x+1}e^{-x}$

16. $f(x)=\begin{cases}|2x-1|e^{-x^2} & x\ge 0\\ \dfrac{1}{1-2x} & x<0\end{cases}$

17. $f(x)=\begin{cases}\left(e^{-\frac{1}{|x|}}+\dfrac{|x|}{x}\right)\arctan x & x\neq 0\\ -1 & x=0\end{cases}$

18. $f(x)=e^{\frac{|x^2-x-2|}{x}}$

19. $f(x)=\sqrt{x^2+1}-|x|$

20. $f(x)=\sqrt{x^2-|6x-9|}$

21. $f(x)=\sqrt{2-x}-\sqrt{|x|}$

22. $f(x)=\arctan\sqrt{\dfrac{2x+1}{4-2x}}$

LIMITI CON FORMULA DI TAYLOR

1. $\lim\limits_{x\to 0^+}\dfrac{\sin\left(2x+5x^2\right)+1-e^{2x}-3x^{\alpha}}{\ln\left(1+x^{\alpha}\right)\ln x-\ln\left(1+\sin^3 x\right)}$

2. $\lim\limits_{x\to 0^+}\dfrac{\ln(1+x)-\sin x+\tan^3 x}{x\sin^2\sqrt{x}-\ln x\sin^3 x}$

3. $\lim\limits_{x\to\infty}\dfrac{\ln\left(1+\dfrac{4}{x}\right)}{4\sin^2\dfrac{1}{x}}-x$

4. $\lim\limits_{x\to 0}\dfrac{x4^x-\ln^3(1-x)-x}{1-\cos x}$

5. $\lim\limits_{x\to 0^+}\dfrac{\tan^6 x+x\sin^{\alpha}x}{3x^2-\ln\left(1+3x^2\right)}$

6. $\lim\limits_{x\to 0}\left(\cosh^{\alpha}x\right)^{\frac{1}{\cos x}}$

7. $\lim\limits_{x\to 0^+}\left(\dfrac{1}{\sin x}-\dfrac{1}{x}\right)\dfrac{e^{x-x^2}-1-\alpha x}{x^{3\alpha}}$

8. $\lim\limits_{x\to 0^+}\dfrac{\sinh x^{\alpha}+\tan x\ln x-x^{\alpha}}{\ln\left(1-x^2\right)+\sin^{\alpha}x}$

9. $\lim\limits_{x\to 0^+}\dfrac{\ln\left(1+x^5\right)-x^{\alpha}+\sin^3 x}{\sinh x-x+(\cosh x-1)^{\alpha}}$

10. $\lim\limits_{x\to\infty}\dfrac{\ln\left(1+2e^x\right)}{\sqrt{1+x^2}}$

11. $\lim_{x\to 1}(1-x)\tan\left(\frac{\pi x}{2}\right)$

12. $\lim_{x\to\infty} x^2 \ln\cos\frac{1}{x}$

13. $\lim_{x\to 0}\left(\frac{\sin x}{x}\right)^{\cot x}$

14. $\lim_{x\to\infty}\left(\sin^3\frac{1}{x}\right)^{\left(\frac{1}{x}-\sin\frac{1}{x}\right)}$

15. $\lim_{x\to\infty}\frac{x^3-\ln\cosh x^{\alpha}}{\sqrt{x^4+1}+\sin x^{\alpha}}$

16. $\lim_{x\to 0}\frac{\tan\left(x^2-x^3\right)-\sin x^2}{x-\sin x}$

INTEGRALI

1. $\int_a^b dx \lg_{10} x$

2. $\int_0^{\pi/2} dx \cos x \sin x\, e^{\sin x}$

3. $\int dx \frac{3x+1}{x^2-5x+6}$

4. $\int_{-1}^{0} dx \arcsin x$

5. $\int dx \frac{x+3}{(x+1)(x^2+9)}$

6. $\int dx \frac{1}{x^6-3x^3+1}$