

ESERCIZI DA SVOLGERE A CASA

Calcola le seguenti DERIVATE:

1. $D\left(\frac{1}{2}\text{sen}^5x\right)$

SOLUZ.: $\frac{5}{2}\text{sen}^4x \cdot \text{cos}x$

2. $D(\text{tg}x(1 - \text{sen}^2x + \text{cos}^2x))$

SOLUZ.: $2\text{cos}2x$

3. $D\left(\sqrt{e} \cdot \text{sen}\frac{2}{3}\pi\right)$

SOLUZ.: 0

4. $D\left(\frac{2x+1}{x-2}\right)$

SOLUZ.: $-\frac{5}{(x-2)^2}$

5. $D\left(x^2\sqrt{3-x^2}\right)$

SOLUZ.: $\frac{6x-3x^3}{\sqrt{3-x^2}}$

6. $D\left(\frac{1}{2}\text{cos}^2x\right)$

SOLUZ.: $-\text{sen}x \cdot \text{cos}x$

7. $D\left(\ln 2x^{-3} - 10^5x^{\frac{3}{5}}\right)$

SOLUZ.: $-\frac{3}{x}(1 + 2 \cdot 10^5x^{\frac{3}{5}})$

8. $D(\text{cos}x \cdot (1 + \text{tg}x))$

SOLUZ.: $\text{cos}x - \text{sen}x$

9. $D(\pi \text{tg}^3x - \text{sen}x)$

SOLUZ.: $3\pi \text{tg}^2x \cdot \frac{1}{\text{cos}^2x} - \text{cos}x$

10. $D((1 + \text{tg}x)(1 - \text{cot}g x))$

SOLUZ.: $\frac{1}{\text{sen}^2x \text{cos}^2x}$

11. $D(3 + \text{sen}x - \text{cot}g x + 8)$

SOLUZ.: $\text{cos}x + \frac{1}{\text{sen}^2x}$

12. $D\left(\frac{x^2}{x-1}\right)$

SOLUZ.: $\frac{x^2-2x}{(x-1)^2}$

13. $D(\text{sen}x + 2\text{cos}x - \text{cot}g x + 8\text{tg}x)$

SOLUZ.: $\text{cos}x - 2\text{sen}x + \frac{1}{\text{sen}^2x} + 8\frac{1}{\text{cos}^2x}$

14. $D\left(\ln \sqrt{\frac{1+\text{sin}x}{1-\text{sin}x}}\right)$

SOLUZ.: $\frac{1}{\text{cos}x}$

15. $D\left(\text{cot}g \frac{1}{\sqrt{x}} + \frac{\pi}{2} \ln x\right)$

SOLUZ.: $\frac{1}{2\sqrt{x^3}} \frac{1}{\text{sen}^2 \frac{1}{\sqrt{x}}} + \frac{\pi}{2x}$

16. $D\left(\log_2 \text{sen}x + \frac{\pi}{2} \text{tg}x\right)$

SOLUZ.: $\frac{\text{cot}g x}{\ln 2} + \frac{\pi}{2\text{cos}^2x}$

Il seguente documento si riferisce alle lezioni del prof. Mario Antonuzzi, tratte dal seguente sito:

<https://www.matematichiamo.it/>

Iscriviti anche tu al CANALE e impariamo insieme la matematica!