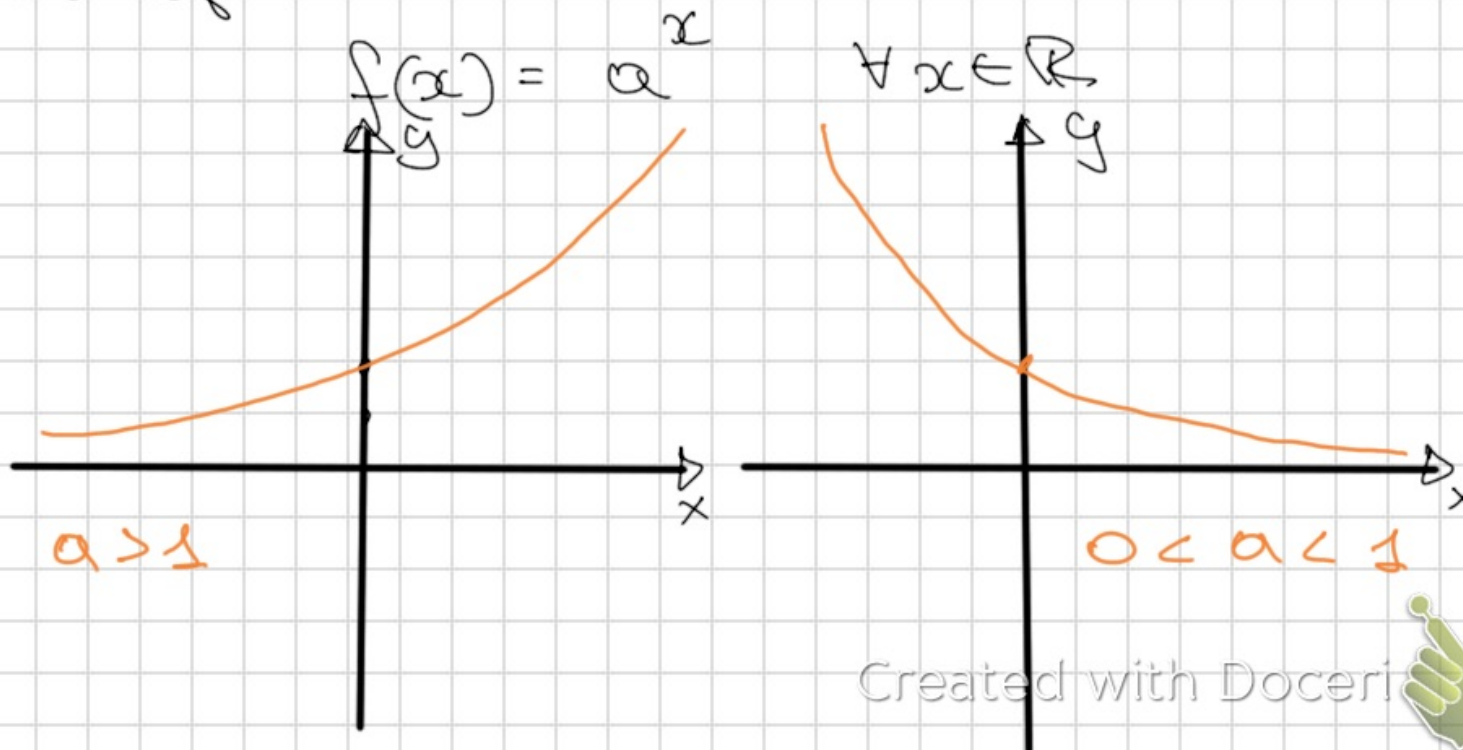


Lezione del 09-11-2023

La funzione esponenziale

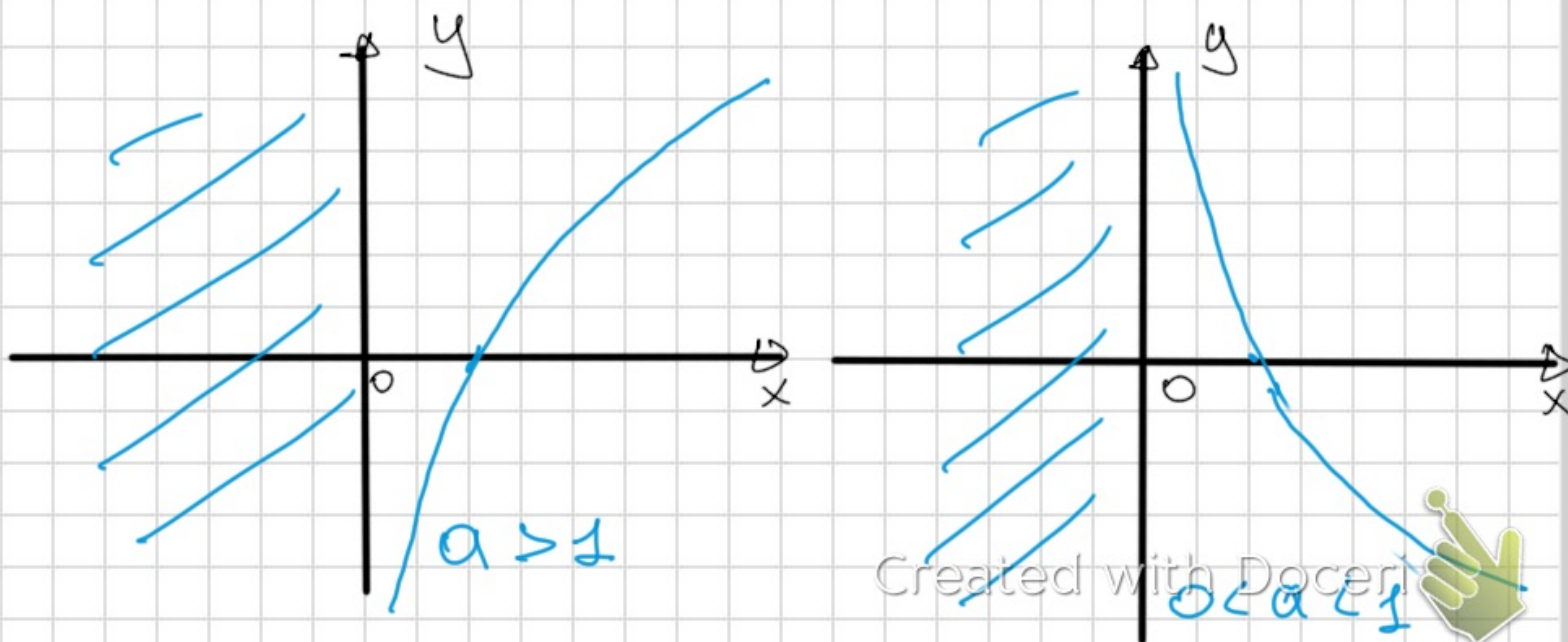
Se a è un numero reale positivo e diverso da 1, si chiama funzione esponenziale, di base a , la funzione così definita

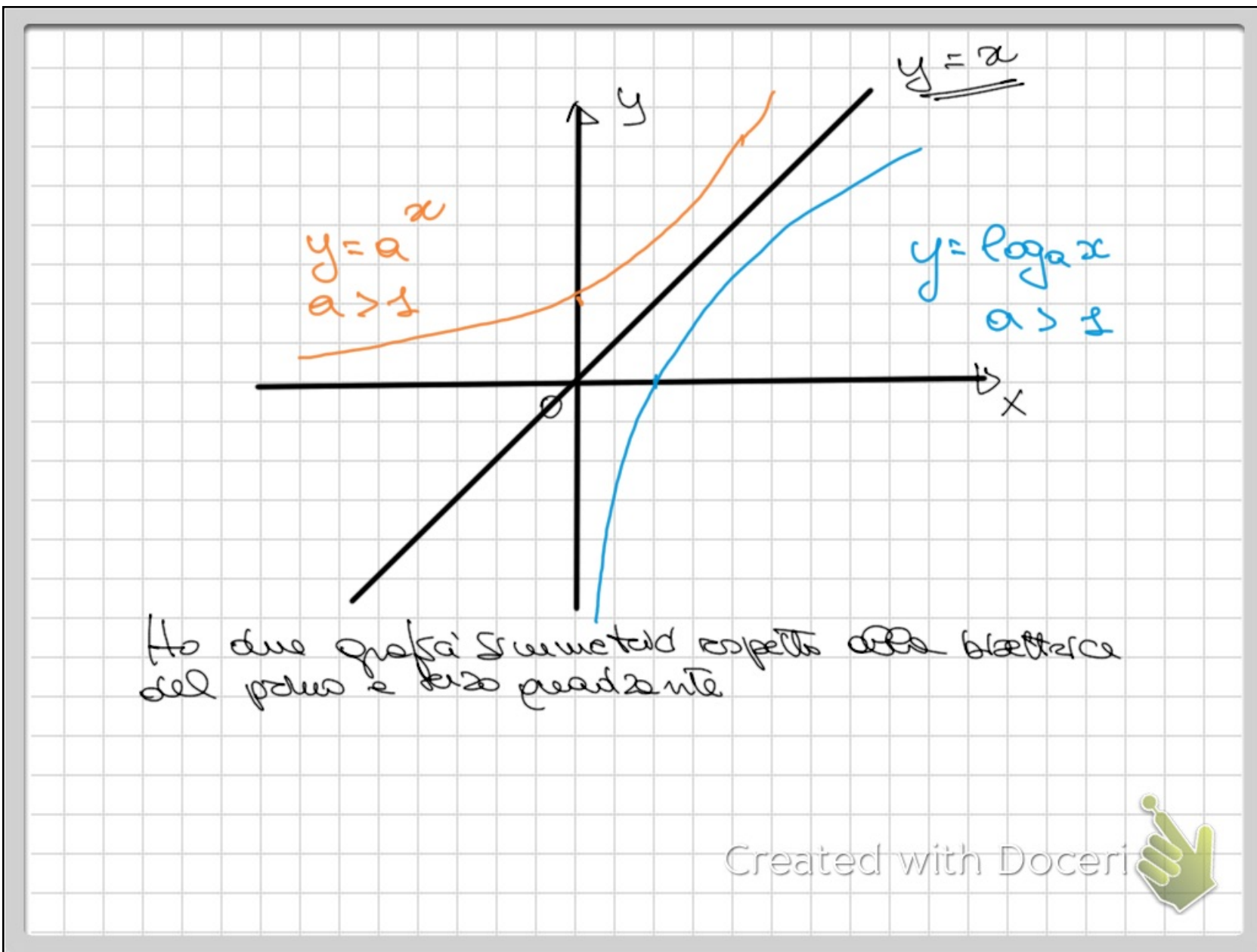


La funzione logaritmica

Se a è un numero reale positivo e diverso da 1, si chiama funzione logaritmica di base a la funzione con la seguente

$$f(x) = \log_a x, \quad \forall x \in]0; +\infty[$$





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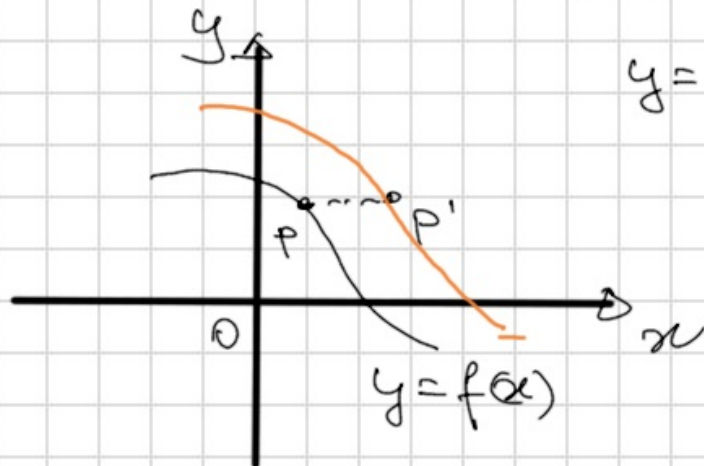


Tre lezioni

Una traslazione è una simetria di equazioni

$$\begin{cases} x' = x + a \\ y' = y + b \end{cases}$$

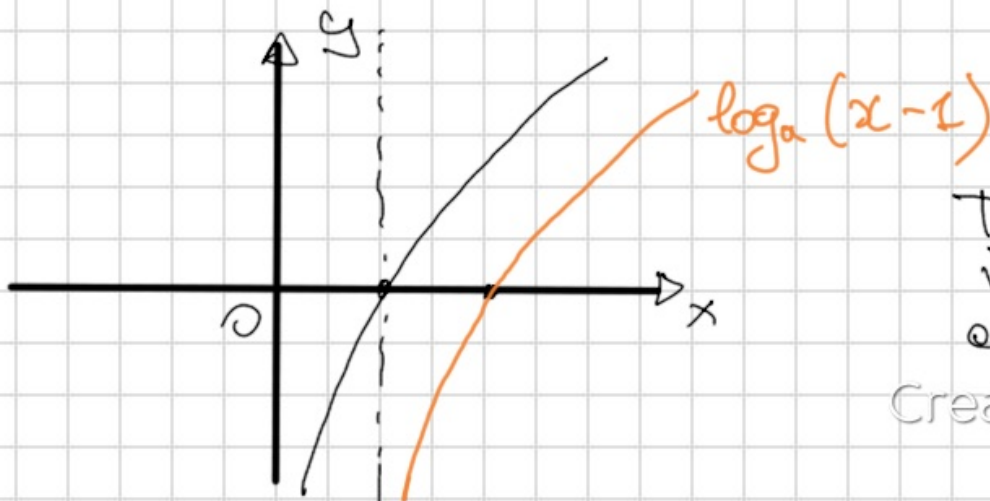
$$y = f(x - a)$$



$$y = \log_a x$$

$$y = \log_a (x - 1)$$

$$a > 1$$

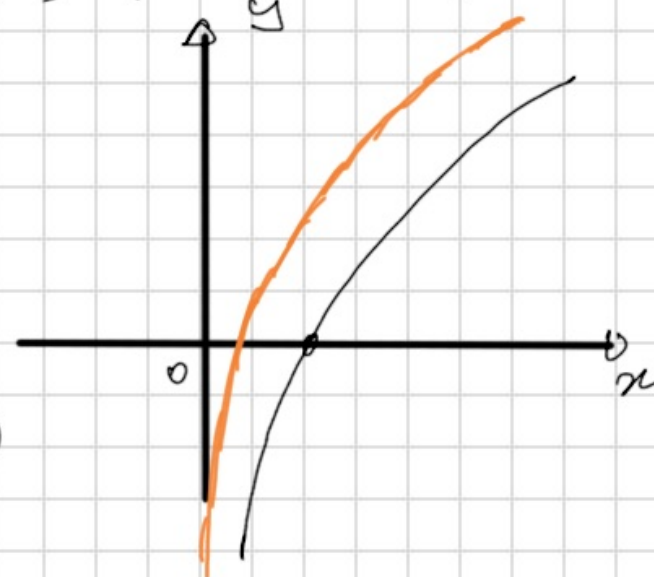
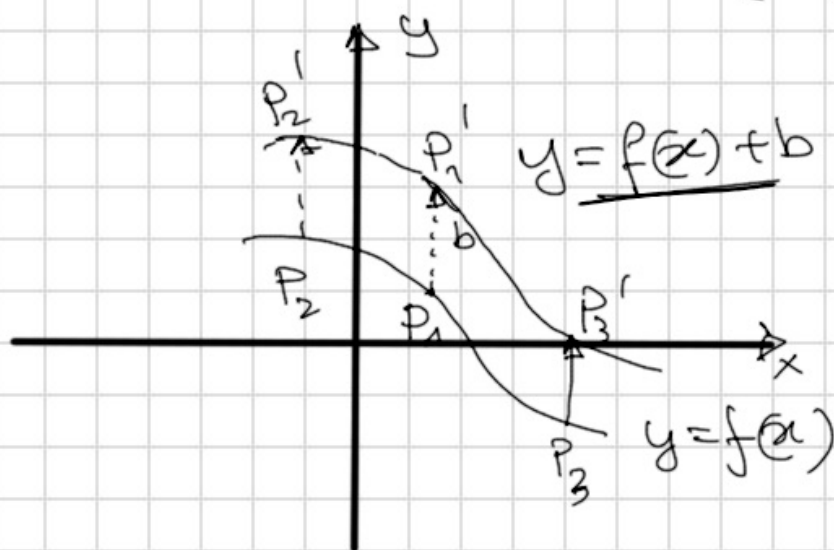


Traslazione di vertice
 $\bar{v}(a, 0)$ parallela
 all'asse x .

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Traslazione di vettore $\vec{v}(0; b)$ parallelamente a y

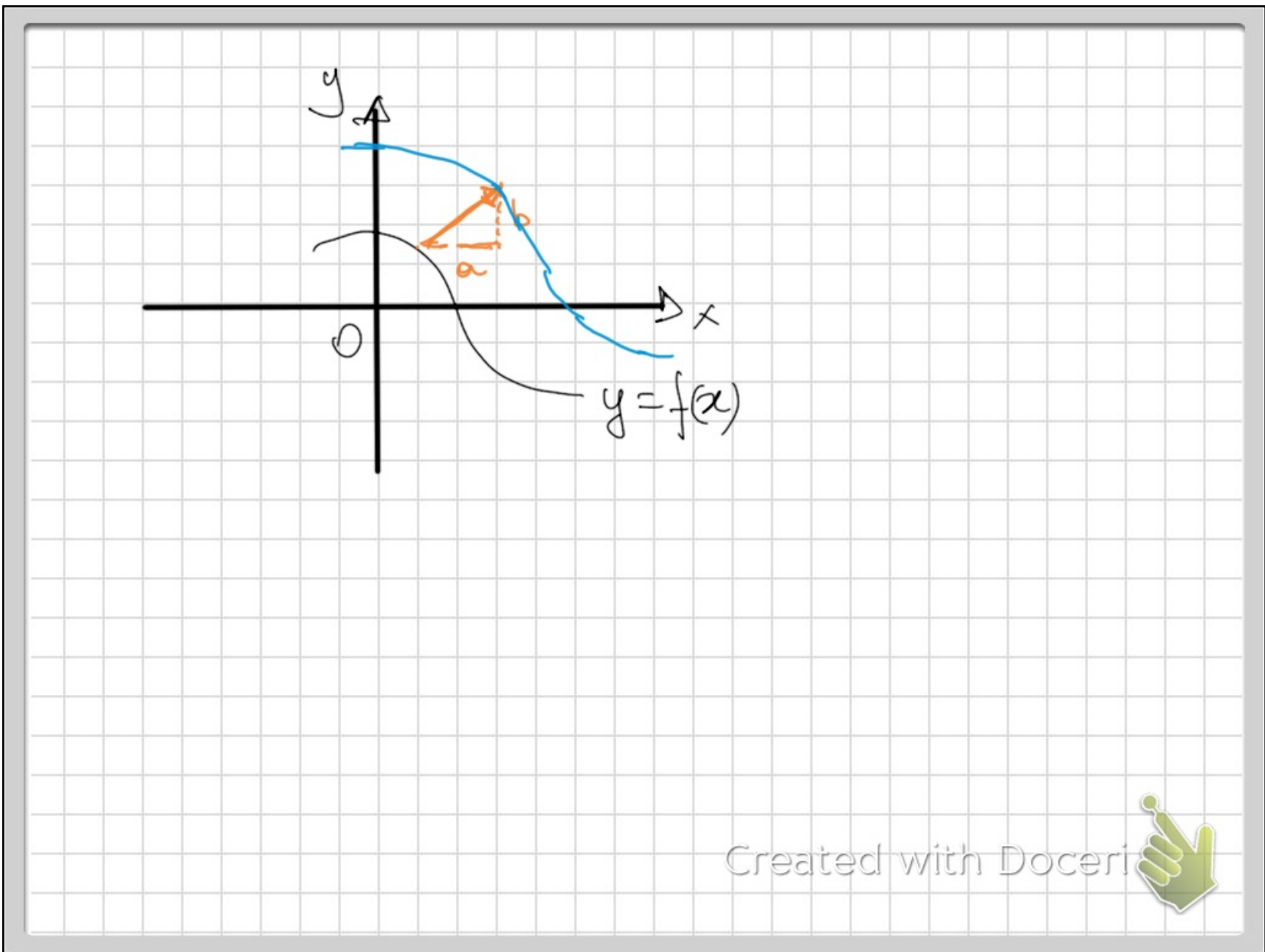


$y = \log x + 1$

$y = \log(x-1) + 2$
fare a casa

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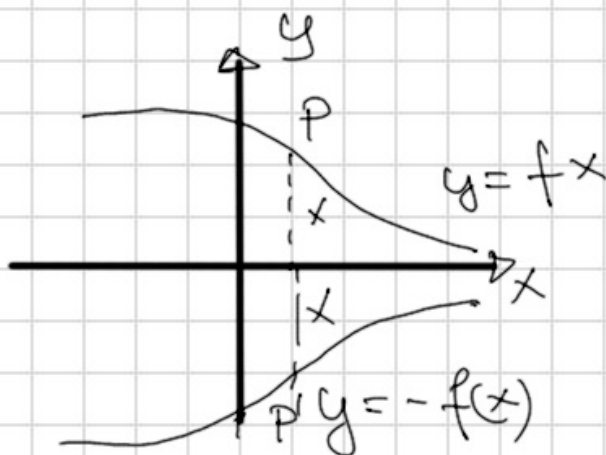


Le simmetrie

Simmetria rispetto all'asse x

$$|y = f(x)|$$

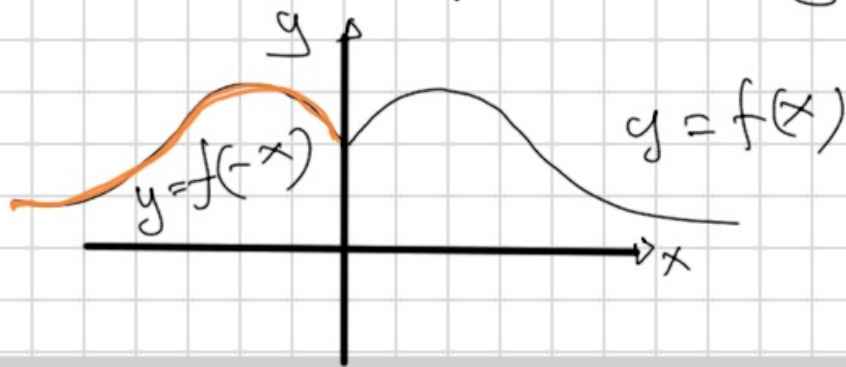
$$y = -f(x)$$



$$y = -\log_3 x$$

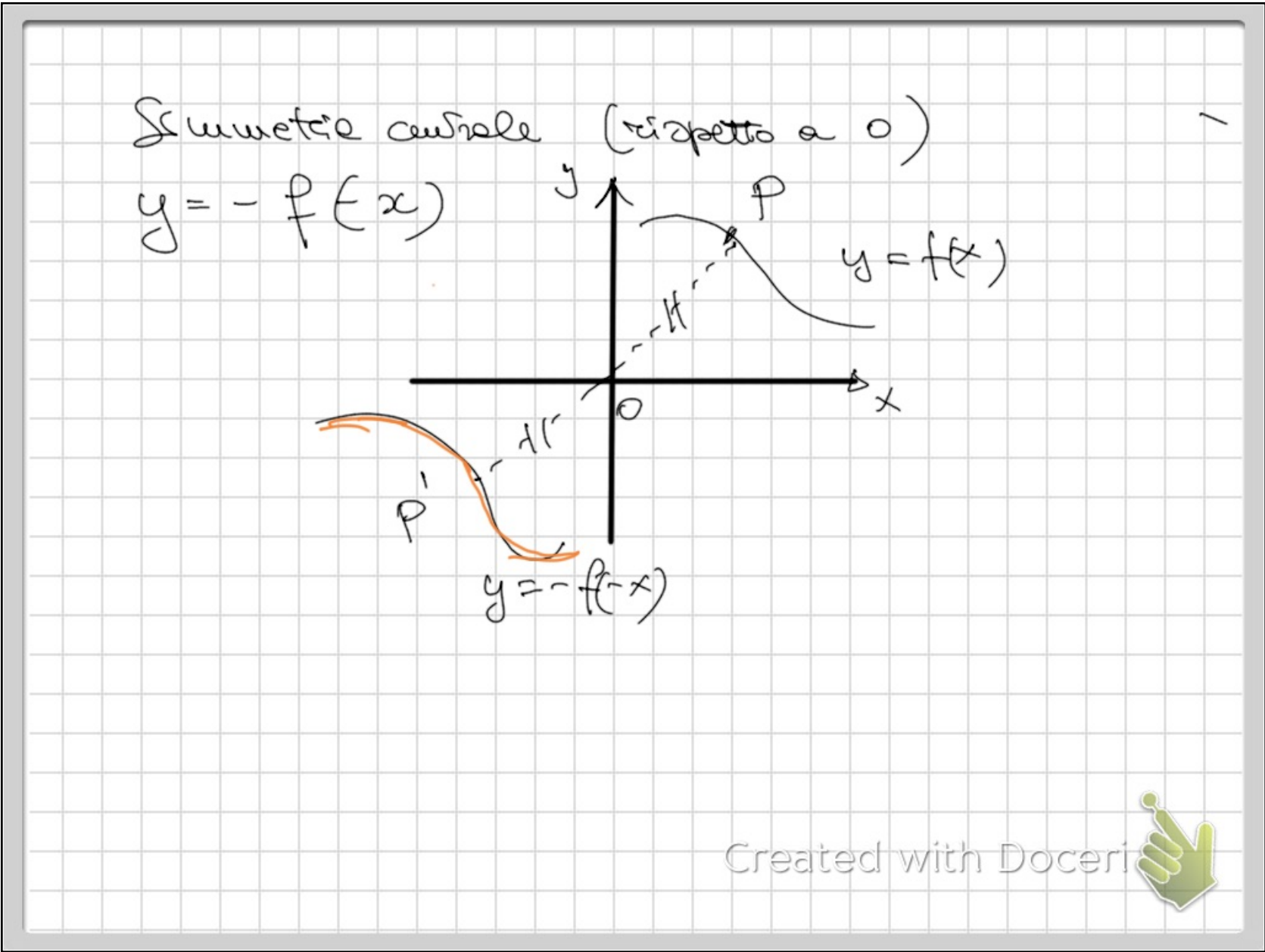
Simmetria rispetto all'asse y

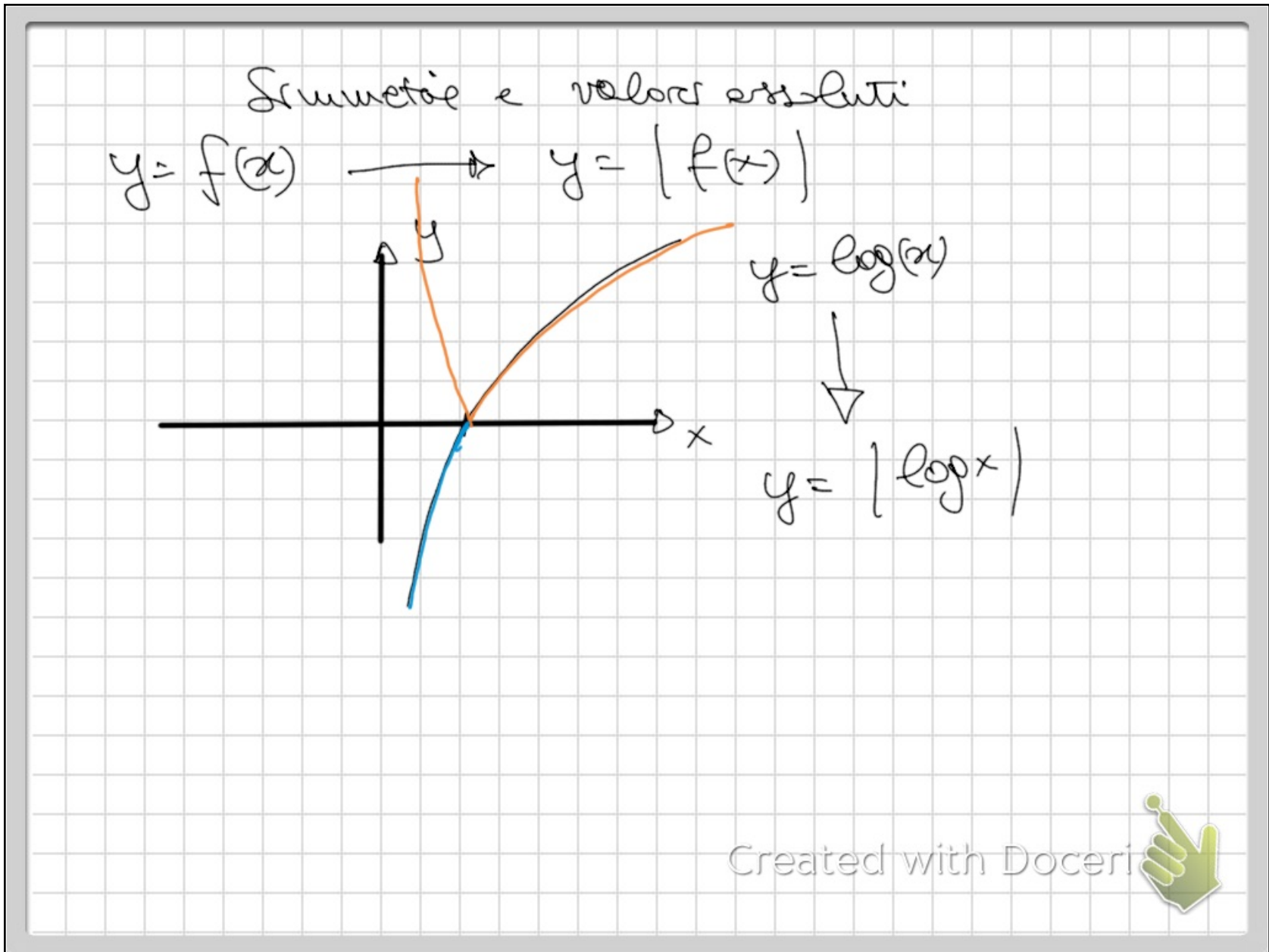
$$y = f(-x)$$



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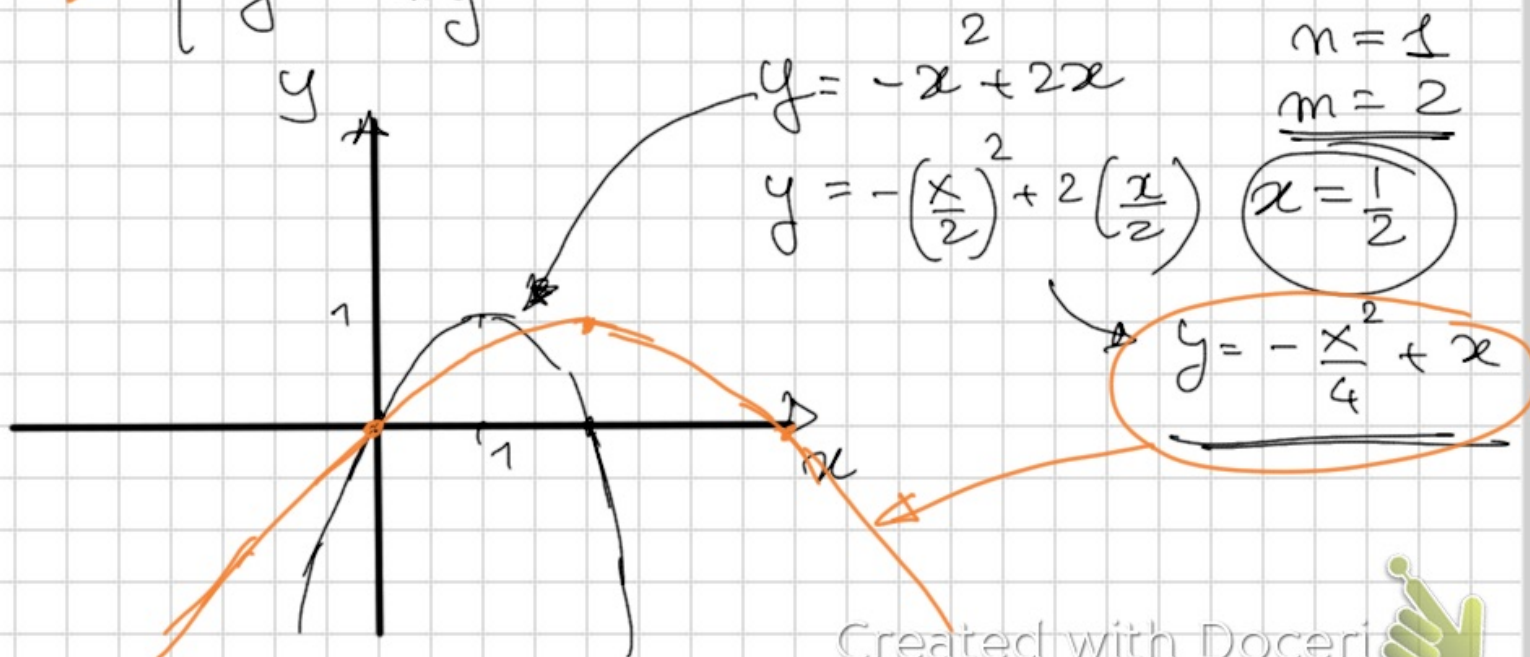
Derivazioni

Una derivazione è una trasformazione lineare isomorfica di \mathbb{R}^n in \mathbb{R}^n

$$\begin{cases} x' = mx \\ y' = ny \end{cases}$$

$$m, n \in \mathbb{R}^+$$

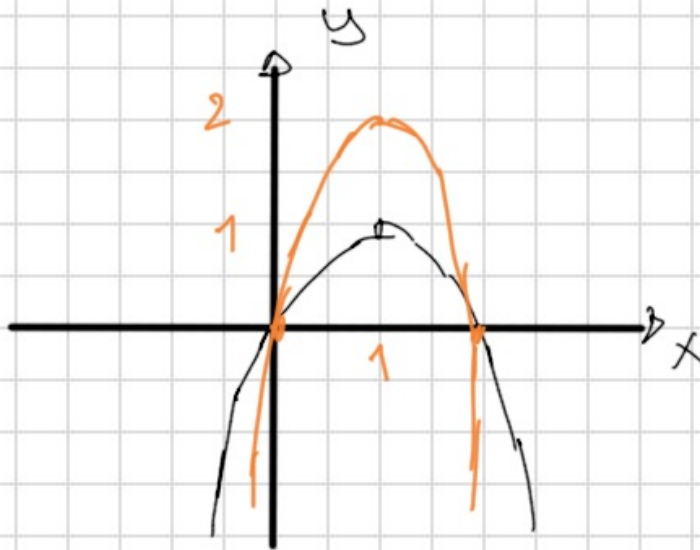
$$\begin{cases} x' = 2x \\ y' = y \end{cases}$$



$$\begin{matrix} n = 1 \\ m = 2 \end{matrix}$$

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$$m = 1$$

$$m = 2$$

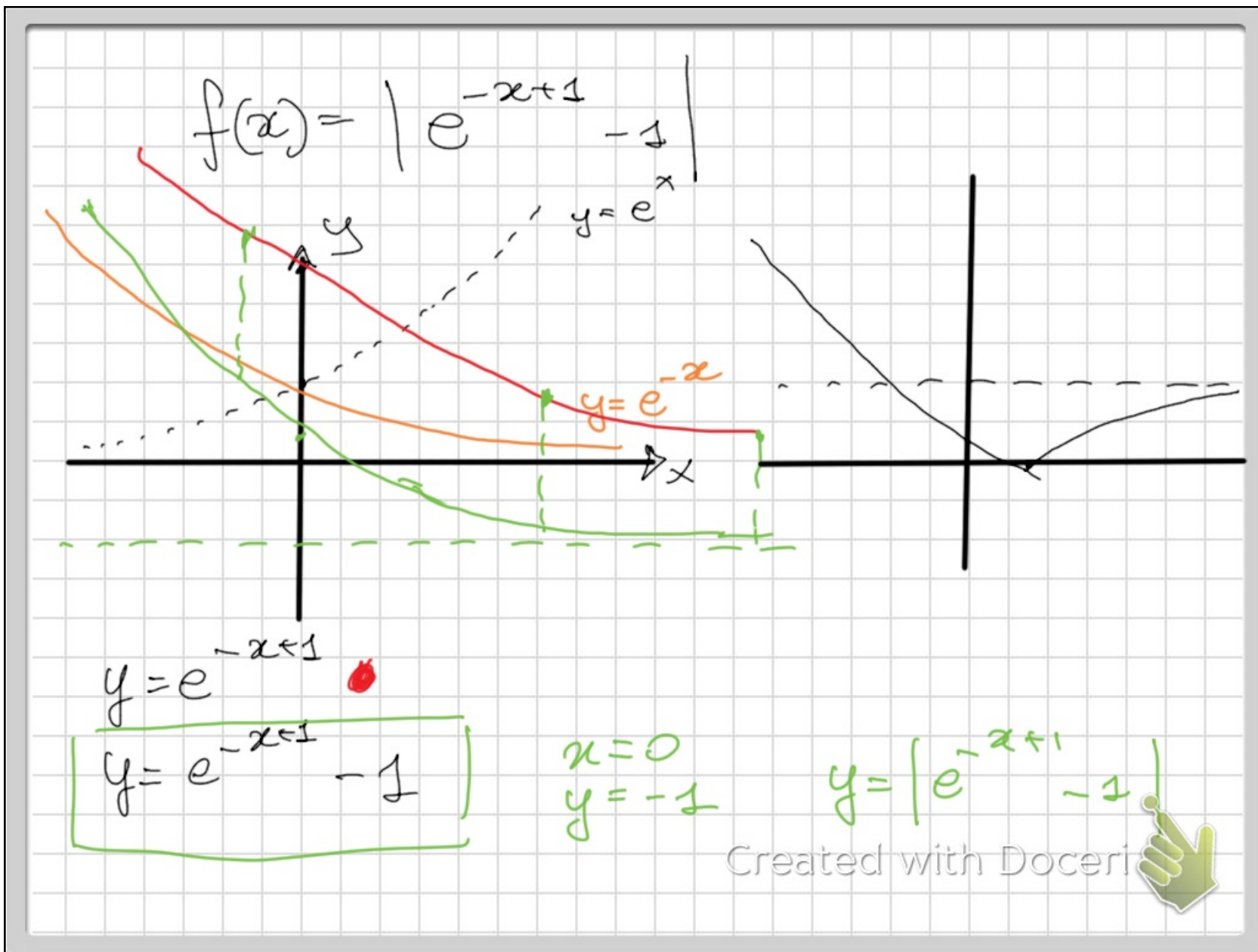
$$y = 2(-x^2 + 2x)$$

$$y = m \left(\frac{f}{m} \right)$$

~~Bezeichnung~~

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So here a case

$$f(x) = |\sqrt{x+1} - 1|$$

$$f(x) = |1 - \ln(x-e)|$$

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