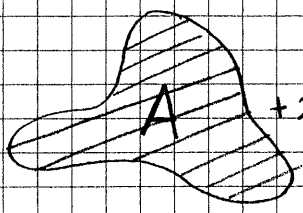
24/09/15

- $\log x = \log_e x$
- $\log\left(\sqrt[4]{\frac{ab}{b^3}}\right) = \log a^{\frac{2}{4}} - \log b^{\frac{3}{4}}$

$= \frac{2}{4}\log a - \frac{3}{4}\log b$

- $\log\left(\sqrt[4]{x}\right) = \log\left(x^{\frac{1}{4}}\right) = \frac{1}{4}\log x$

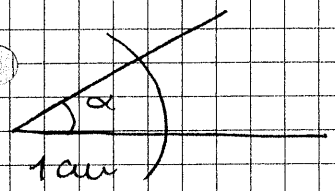


+200% → l'area aumenta di 4 volte A

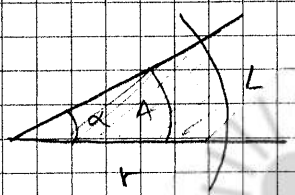
- il perimetro viene invece moltiplicato per due 2P

au^2

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- 

$90° = \frac{\pi}{2}$

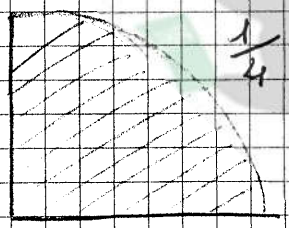


$L? = r \cdot \alpha$

angolo giro

$A = \frac{\alpha}{2\pi} \cdot \pi r^2 = \frac{\alpha}{2} r^2$

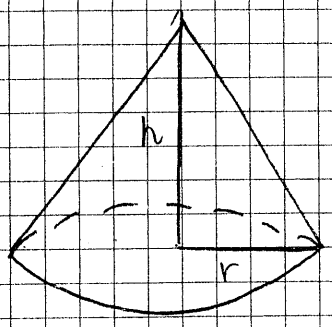
1 → angolo piccolo; area di tutta la torta



$\frac{1}{4}$ $\quad \frac{90°}{360°} = \frac{1}{4}$ $\quad \frac{\frac{\pi}{2}}{2\pi} = \frac{1}{4}$

- $60° = \frac{1}{6}$ TOT
- $30° = \frac{1}{3}$ TOT

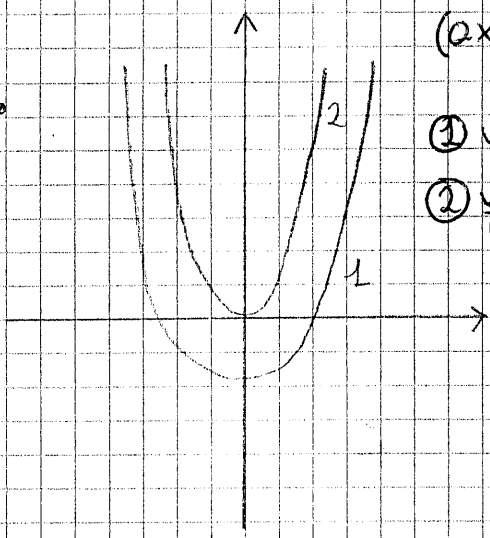
-



- $\frac{\pi}{3} r^2 h$
- $\frac{\pi}{3} rh$
- $\frac{\pi}{3} r^2 h^2$

Per verificare quale è la formula giusta faccio il controllo della dimensione

(ax^2+bx+c)



① $y=x^2-1$

② $y=x^2$

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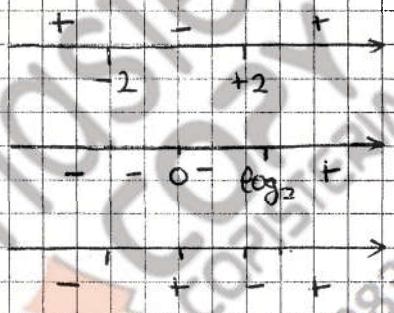
- $(e^x-2)(x^2-4)\geq 0$

$x^2-4=0 \quad x=\pm 2$

$e^x-2\geq 0 \quad e^x\geq 2$

$\downarrow$

$x\geq \log_2$



$-2\leq x\leq \log_2$ o $x\geq 2$

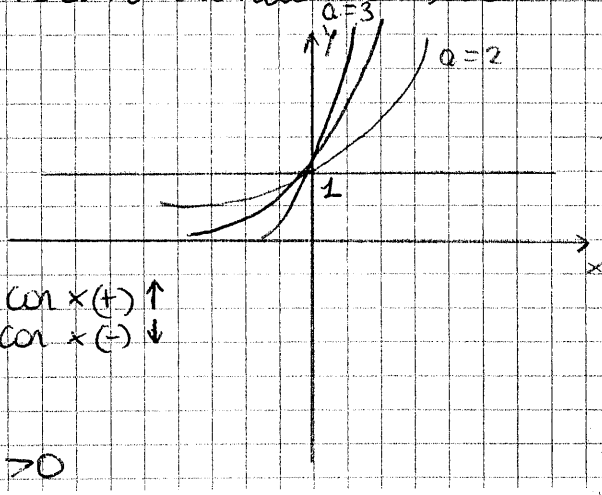
- $(\operatorname{sen}x)^2-\frac{1}{4}\geq 0 \qquad 0\leq x\leq \pi$

$y^2-\frac{1}{4}\geq 0 \qquad y\geq \frac{1}{2} \qquad \operatorname{sen}^2 x\geq \frac{1}{2}$

26/09/2015

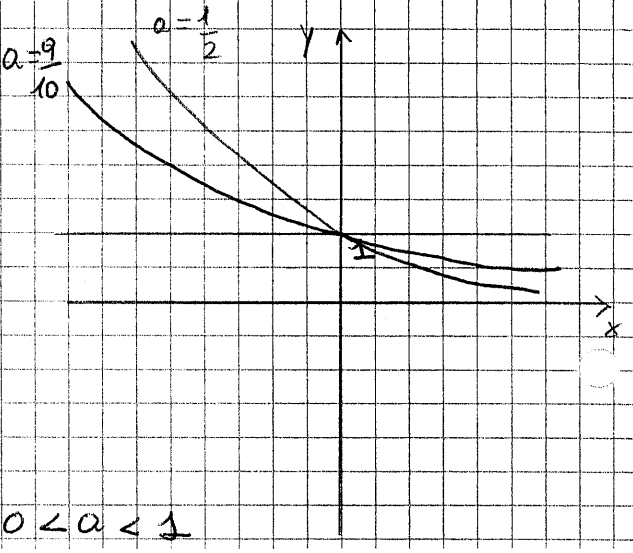
- Funzioni esponenziali: $f(x)=a^x$ → VARIABILE

- $a>0$ la funzione è definita $\forall x=a$ tutti i numeri reali



- con x (+) ↑
- con x (−) ↓

$a>0$



$0<a<1$

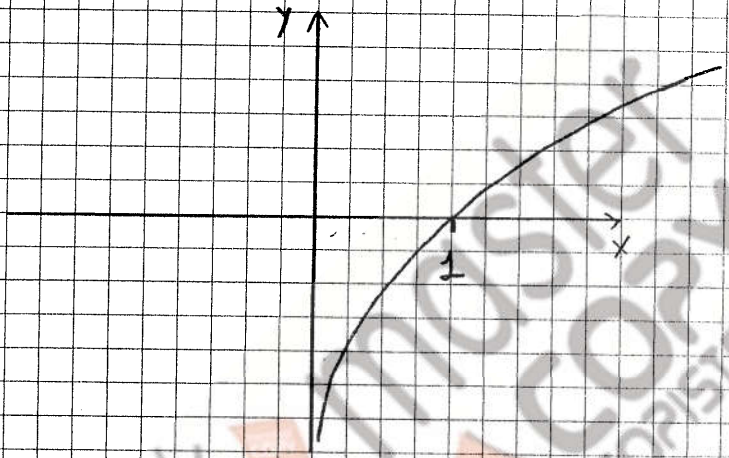
- BASE DA UTILIZZARE: $e = 2,71\ldots$

$$a^b = (e^{\log a})^b = e^{b \cdot \log a}$$

↳ TUTTE LE POTENZE POSSONO ESSERE SCRITTE IN BASE (e)

• LOGARITMO

$f(x) = \log x$ ⇒ è definita solo per $x > 0$
- in 1 vale 0
- cresce al crescere di x positivo

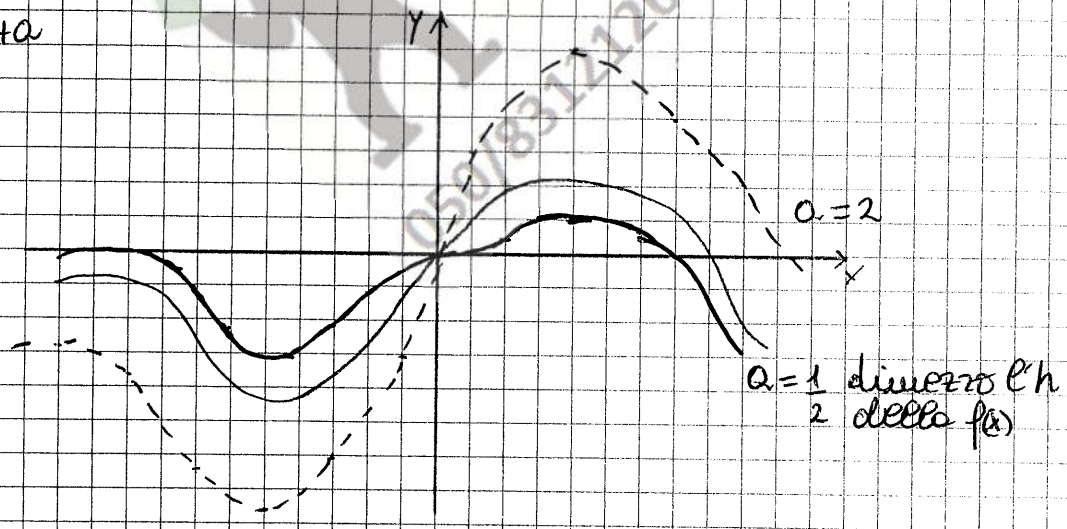


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• Operazioni sui grafici:

1- Dato il grafico di $f(x)$ con $a > 1$ si ottiene dal grafico di $f(x)$ dilatandolo verticalmente di un fattore di a

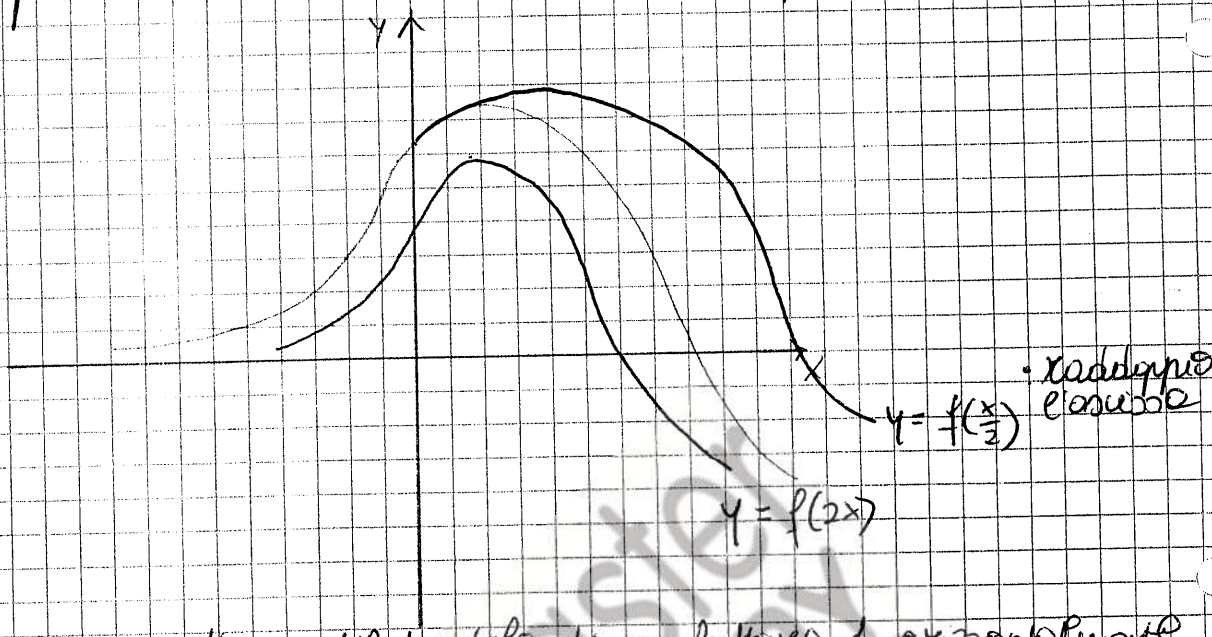
$f(x) + a$



$a = \frac{1}{2}$ diverso da h della $f(x)$

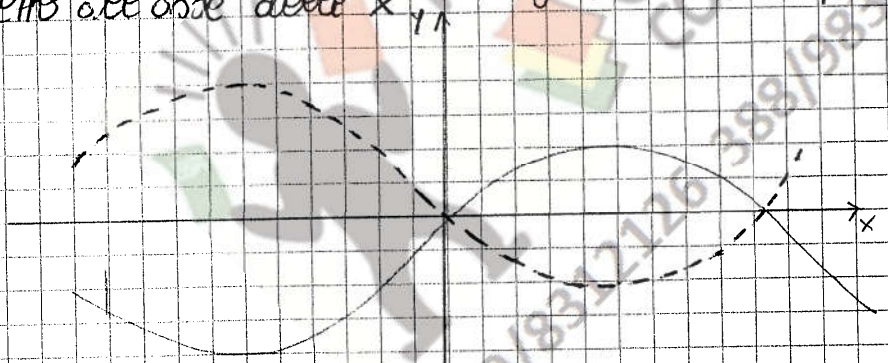
2- Se $a < 1$ si ottiene comprimendolo verticalmente di un fatt. a

1- Il grafico di $f(ax)$ con $a>1$ si ottiene dal grafico di $f(x)$ comprimendolo orizzontalmente di un fattore a

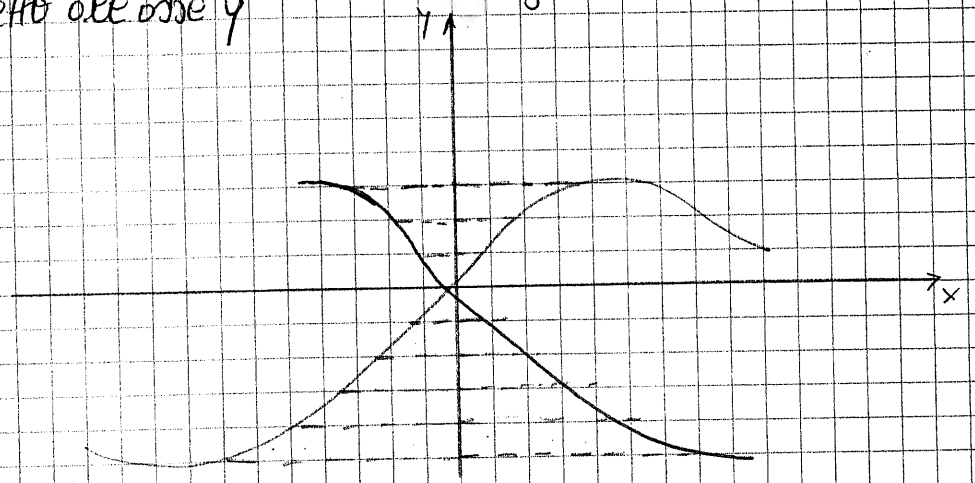


2- Se $a<1$ si ottiene dilatandolo di un fattore $\frac{1}{a}$ orizzontalmente

1- Il grafico di $-f(x)$ si ottiene dal grafico di $f(x)$ per riflessione rispetto all'asse delle x

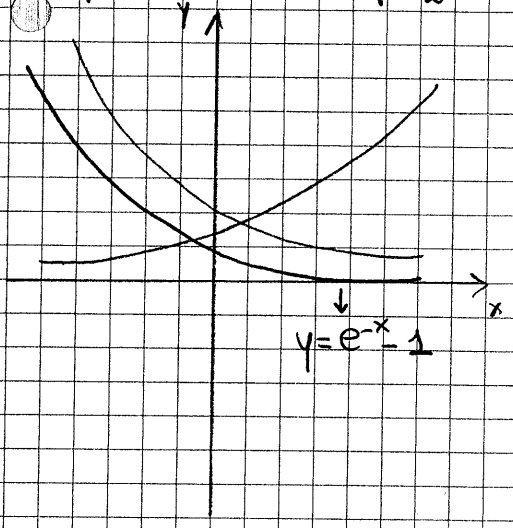


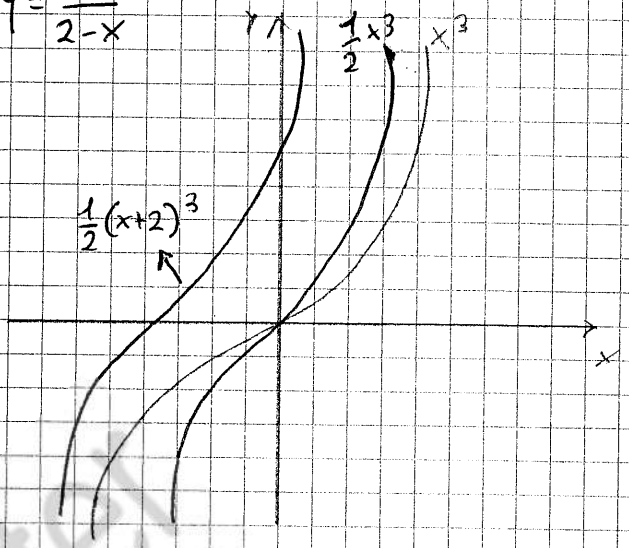
1- Il grafico di $f(-x)$ si ottiene dal grafico di $f(x)$ per riflessione rispetto all'asse y



Esercizi

- $y = e^{-x} - 1$
- $y = \frac{1}{2}(x+2)^3$
- $y = \frac{1}{2-x}$
- disegno e·h



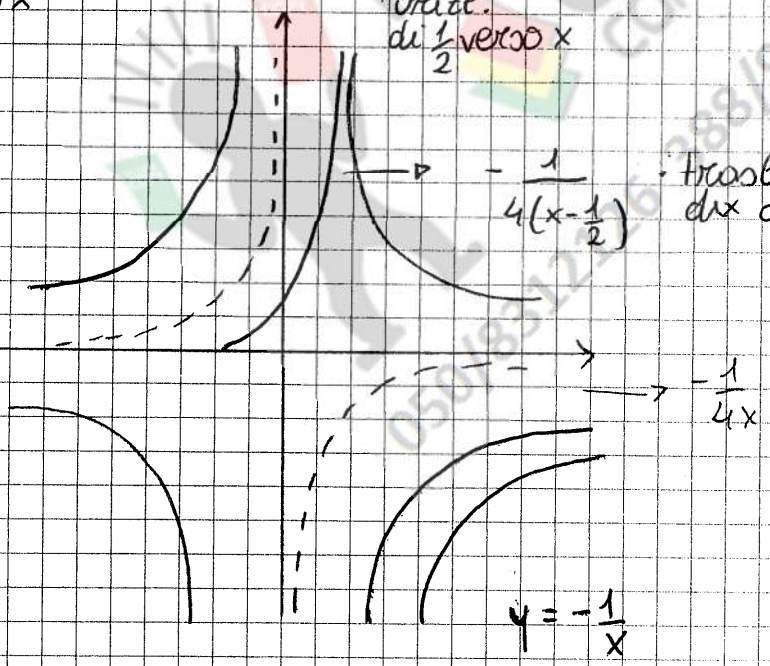


- $y = \frac{1}{2}(x+2)^3 \rightsquigarrow x^3 \rightsquigarrow \frac{1}{2}(x^3) \rightsquigarrow \frac{1}{2}(x+2)^3$

- $\frac{1}{x} = x^{-1} \rightsquigarrow -\frac{1}{x} \rightsquigarrow -\frac{1}{4x} \rightsquigarrow -\frac{1}{4(x-\frac{1}{2})} \rightsquigarrow \frac{1}{2-4x}$

  - ribalto rispetto a x
  - comprimo orizz. di 4
  - traslo orizz. di $\frac{1}{2}$ verso x

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- GRAFICO DI $-f(-x)$ = RIFLESSIONE RISPETTO ALL'ORIGINE

