POTENZE

$$\sqrt[4]{243} = \sqrt[4]{3^5} = 3^{\frac{5}{4}}$$

$$\sqrt[4]{0{,}25} = \sqrt[4]{\frac{25}{100}} = \sqrt[4]{\frac{1}{4}} = \sqrt[\cancel{4}\,2]{\left(\frac{1}{2}\right)^{\cancel{2}}} = \sqrt{2^{-1}} = 2^{-\frac{1}{2}}$$

$$\sqrt[4]{\left(\frac{1}{4}\right)^{\frac{4}{3}}} = \left(\frac{1}{4}\right)^{\frac{\cancel{4}}{3}\cdot\frac{1}{\cancel{4}}} = \left(\frac{1}{4}\right)^{\frac{1}{3}} = \left(2^{-2}\right)^{\frac{1}{3}} = 2^{-\frac{2}{3}}$$

$$\sqrt[3]{2^{-2}} = \sqrt[3]{\frac{1}{4}} = \frac{1}{\sqrt[3]{4}} =$$

$$= \frac{1}{\sqrt[3]{2^2}} \cdot \frac{\sqrt[3]{2}}{\sqrt[3]{2}} = \frac{\sqrt[3]{2}}{2}$$

SEMPLIFICARE

21 $3^{\sqrt{5}} \cdot 3^{\sqrt{20}}$; $\quad 2^{\sqrt{3}} \cdot 3^{\sqrt{3}}$. $\quad [3^{3\cdot\sqrt{5}}; 6^{\sqrt{3}}]$

22 $5^{3\sqrt{3}} : 5^{\sqrt{3}}$; $\quad (3^{\sqrt{2}})^{\sqrt{2}}$. $\quad [5^{2\sqrt{3}}; 9]$

$$3^{\sqrt{5}} \cdot 3^{\sqrt{20}} = 3^{\sqrt{5}+\sqrt{20}} = 3^{\sqrt{5}+2\sqrt{5}} = 3^{3\sqrt{5}}$$

$$2^{\sqrt{3}} \cdot 3^{\sqrt{3}} = (2\cdot 3)^{\sqrt{3}} = 6^{\sqrt{3}}$$

$$5^{3\sqrt{3}} : 5^{\sqrt{3}} = 5^{3\sqrt{3}-\sqrt{3}} = 5^{2\sqrt{3}}$$

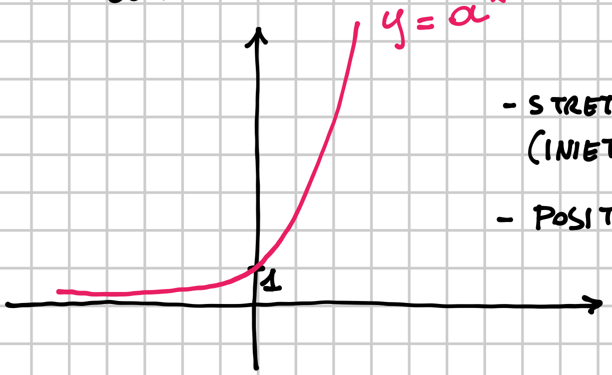
$$(3^{\sqrt{2}})^{\sqrt{2}} = 3^{\sqrt{2}\cdot\sqrt{2}} = 3^2 = 9$$

RICHIAMI FUNZIONE ESPONENZIALE

$f:\mathbb{R}\to\mathbb{R}$ $\qquad f(x)=a^x$

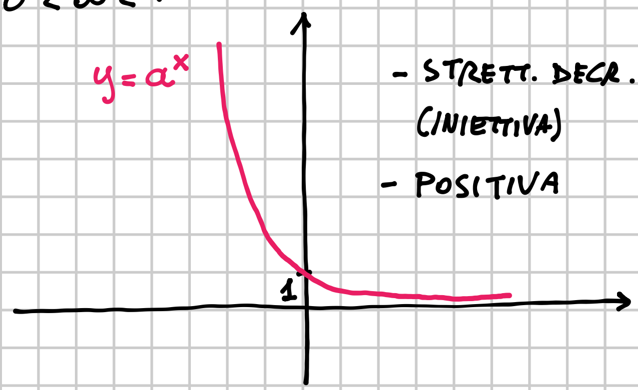
$a>0$

$a>1$



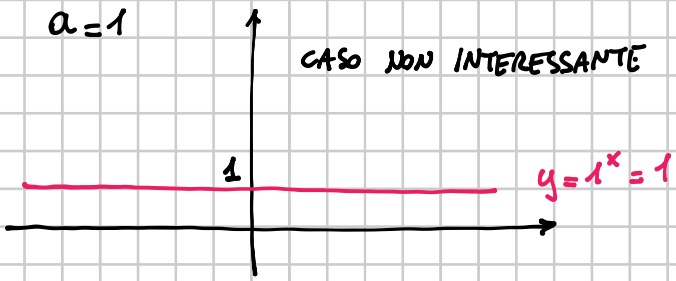
- STRETT. CRESCENTE (INIETTIVA)
- POSITIVA

$0<a<1$



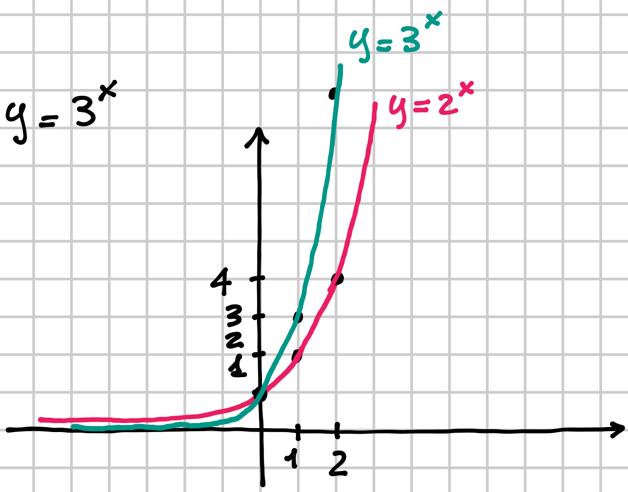
- STRETT. DECR. (INIETTIVA)
- POSITIVA

$a=1$



CASO NON INTERESSANTE

CONFRONTO $\quad y=2^x \quad y=3^x$



IMPORTANTE $\boxed{a^x>0 \quad \forall x\in\mathbb{R} \quad (a>0)}$ (si può dimostrare)