

Ripasso

Corso Informatica UNIPD 2021/2022

October 15, 2021

$$a > 1 \quad a^n > 1 \quad \forall n \in \mathbb{Q}, n > 0 \quad p, q \in \mathbb{N} \wedge q \neq 0 : n = \frac{p}{q} \quad (1)$$

$$a^n = \sqrt[q]{a^p} \geq \sqrt[q]{a} > \sqrt[q]{1} = 1 \quad (2)$$

Questo perchè $a^n > 1 \wedge a > 1 \Rightarrow 1,00000000000001^n > 1$

Dalle proprietà delle potenze ricordiamo che:

$$x < y \Rightarrow a^x < a^y \Rightarrow \frac{1}{a^x} > \frac{1}{a^y} \quad (3)$$

$$x - y < 0 \xRightarrow{\cdot(-1)} y - x > 0 \quad (4)$$

$$a^x - a^y < 0 \xRightarrow{\cdot(-1)} a^y - a^x > 0 \quad (5)$$

$$\Downarrow \quad (6)$$

$$\underbrace{\underbrace{a^x}_{>0} \underbrace{(a^{y-x} - 1)}_{a^n > 1}}_{>0} > 0 \quad (7)$$