

# ESPOENZIALI

## ESPOLENTE

$$y = x^1$$

$$y = x^2$$

$$y = x^n$$

POTENZE

BASE

$$y = a^x$$

funzione esponenziale  
(funzione algebrica condizionale)

## REGOLE POTENZE

1.  $a^0 = 1$
2.  $a^1 = a$ ,  $a^2 = a \cdot a$ , ...,  $a^n = \underbrace{a \cdot a \cdot \dots \cdot a}_{n \text{ volte}}$
3.  $a^{-n} = \frac{1}{a^n}$
4.  $a^{m+n} = a^m \cdot a^n$
5.  $(a^m)^n = a^{m \cdot n}$
6.  $a^{m-n} = a^m \cdot \frac{1}{a^n} = \frac{a^m}{a^n}$
7.  $a^{\frac{1}{n}} = \sqrt[n]{a}$
8.  $a^{\frac{m}{n}} = \sqrt[n]{a^m} = (\sqrt[n]{a})^m$

## ESEMPI

3.  $3^{-5} = \frac{1}{3^5}$
4.  $3^{5+2} = 3^5 \cdot 3^2$
5.  $(2^4)^2 = 2^{4 \cdot 2} = 2^8$
6.  $2^{5-3} = 2^5 \cdot 2^{-3} = 2^5 \cdot \frac{1}{2^3} = \frac{2^5}{2^3}$

$$8. 5^{\frac{3}{2}} = \sqrt{5^3} = 5\sqrt{5}$$

$$\downarrow$$

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

## FUNZIONE $y = a^x$

$$y = a^x$$

$$1. 0 < a < 1$$

$$2. a > 1$$

$$1. 0 < a < 1$$

superioro  $a = \frac{1}{2}$

$$y = \left(\frac{1}{2}\right)^x$$

	x	y
N	0	1
A	1	1/2
B	2	1/4
C	3	1/8
D	-1	2
E	-2	4
F	-3	8

$$y = \left(\frac{1}{3}\right)^x$$

