

POTENZE

Per $a, b \in \mathbf{R}$, $m, n \in \mathbf{N}$:

$a^n = \underbrace{a \cdot a \cdot a \cdot \dots \cdot a}_{n \text{ fattori}} \quad (n \geq 2)$	$a^1 = a$	$a^0 = 1 \quad (a \neq 0)$	$a^{-n} = \frac{1}{a^n} \quad (a \neq 0)$
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Proprietà (valide se ogni espressione è definita)

$a^m \cdot a^n = a^{m+n}$	$(a^m)^n = a^{m \cdot n}$	$a^n \cdot b^n = (a \cdot b)^n$
$a^m \cdot a^n = a^{m+n}$	$a^n : b^n = \frac{a^n}{b^n} = \left(\frac{a}{b}\right)^n = (a : b)^n$	

RADICE QUADRATA

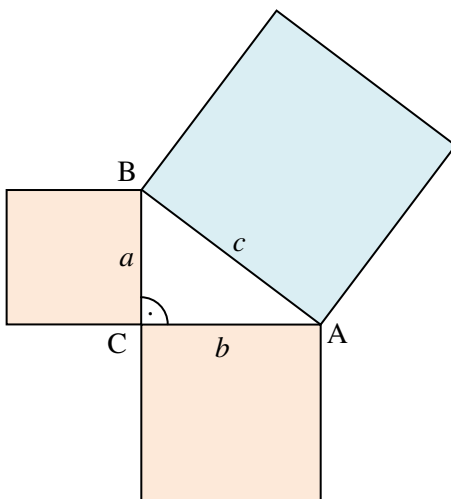
Per $a, b \geq 0$:

$\sqrt{a} = x \Leftrightarrow x^2 = a \quad (x \geq 0)$	$\sqrt{a^2} = (\sqrt{a})^2 = a$
$\sqrt{a} \cdot \sqrt{b} = \sqrt{a \cdot b}$	$\frac{\sqrt{a}}{\sqrt{b}} = \sqrt{\frac{a}{b}} \quad (b \neq 0)$

PRODOTTI NOTEVOLI

$(a+b)^2 = a^2 + 2ab + b^2$	$(a-b)^2 = a^2 - 2ab + b^2$	$(a+b) \cdot (a-b) = a^2 - b^2$
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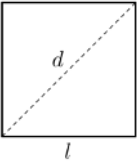
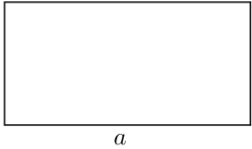
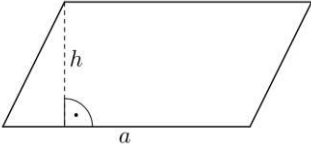
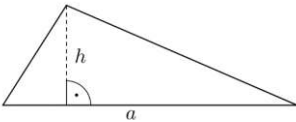
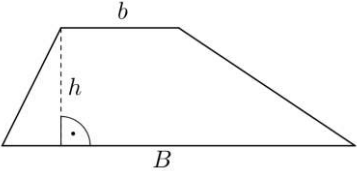
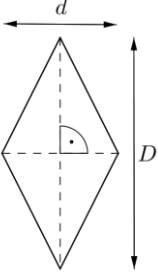
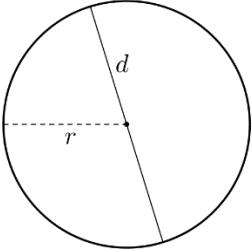
TEOREMA DI PITAGORA



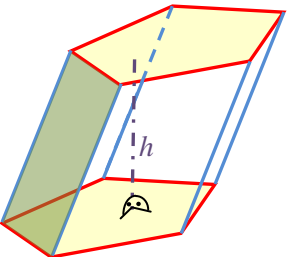
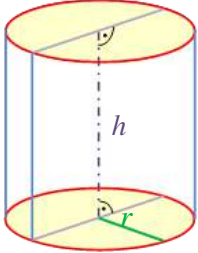
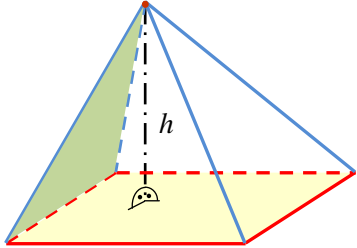
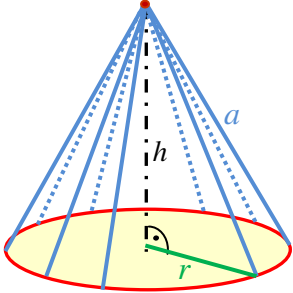
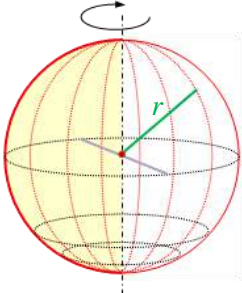
In ogni triangolo rettangolo, la somma delle aree dei quadrati costruiti sui cateti (lati adiacenti all'angolo retto) è uguale all'area del quadrato costruito sull'ipotenusa (lato opposto all'angolo retto).

$$a^2 + b^2 = c^2$$

GEOMETRIA PIANA

Quadrato	Rettangolo	Parallelogramma	Triangolo
			
$\mathcal{A} = l^2$ $d = l \cdot \sqrt{2}$	$\mathcal{A} = a \cdot b$	$\mathcal{A} = a \cdot h$	$\mathcal{A} = \frac{a \cdot h}{2}$
Trapezio		Rombo	Cerchio
			
$\mathcal{A} = \frac{(B+b) \cdot h}{2}$	$\mathcal{A} = \frac{d \cdot D}{2}$	Lunghezza circonferenza: $C = 2 \cdot \pi \cdot r = d \cdot \pi$ Area cerchio: $\mathcal{A} = \pi \cdot r^2$	

GEOMETRIA SOLIDA

Prisma	Cilindro	Piramide
		
$\mathcal{A}_t = 2\mathcal{A}_b + \mathcal{A}_l$ $\mathcal{V} = \mathcal{A}_b \cdot h$	$\mathcal{A}_t = 2\mathcal{A}_b + \mathcal{A}_l$ $\mathcal{A}_l = 2 \cdot \pi \cdot r \cdot h$ $\mathcal{V} = \mathcal{A}_b \cdot h = \pi \cdot r^2 \cdot h$	$\mathcal{A}_t = \mathcal{A}_b + \mathcal{A}_l$ $\mathcal{V} = \frac{1}{3} \cdot \mathcal{A}_b \cdot h$
Cono retto		Sfera
		
$\mathcal{A}_t = \mathcal{A}_b + \mathcal{A}_l$ $\mathcal{A}_l = \pi \cdot r \cdot a$ $\mathcal{V} = \frac{1}{3} \cdot \mathcal{A}_b \cdot h = \frac{1}{3} \cdot \pi \cdot r^2 \cdot h$		$\mathcal{A}_t = 4 \cdot \pi \cdot r^2$ $\mathcal{V} = \frac{4}{3} \cdot \pi \cdot r^3$