

P. 25-45 dalla nota

1. Percentuali

"A è il $n\%$ di B"



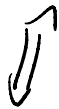
$$A : B = n : 100$$

$$\frac{A}{B} = \frac{n}{100}$$

" $n\%$ "

es A. 1 11. ~~XII~~. 2019

"X cresce del $n\%$."



$$X_{\text{dopo}} = X_{\text{prima}} \left(1 + \frac{n}{100} \right)$$

"X ~~de~~cresce del $n\%$."



$$X_{\text{dopo}} = X_{\text{prima}} \left(1 - \frac{n}{100} \right)$$

X cresce del 1% , poi X ~~de~~cresce del 1%

In totale X è $\rightarrow$ cresciuto



=

$\rightarrow$ decresc. $\checkmark$

X decresce del 1% , poi X cresce del 1%

In totale X è $\rightarrow$ cresciuto
 $\searrow$ =
 $\rightarrow$ decresc. $\checkmark$

$$X_1 \xrightarrow{1\%} X_2 \xrightarrow{1\%} X_3$$

$$X_2 = X_1 \left(1 + \frac{1}{100}\right) \quad X_3 = X_2 \left(1 - \frac{1}{100}\right)$$

$$\begin{cases} X_3 = X_1 \left(1 - \frac{n}{100}\right) \\ X_3 = X_1 \left(1 + \frac{1}{100}\right) \left(1 - \frac{1}{100}\right) \end{cases}$$

$$1 - \frac{n}{100} = \left(1 + \frac{1}{100}\right) \left(1 - \frac{1}{100}\right) = 1 - \frac{1}{10000}$$

$$\frac{n}{100} = \frac{1}{10000} \quad n = 0.01$$

2. Notazione scientifica

$$x = (-) x_0 \cdot 10^n$$

↑
 $1 \leq x_0 < 10 \leftarrow \text{MANTISSA}$

↙
intero ← ESPONENTE

es. $x = 7.21 \cdot 10^{-4}$

$$6.02 \cdot 10^{23}$$

$$\begin{array}{c} 7.4 \\ \hline 0.00074 \cdot 10^4 \cdot 10^{-4} = 7.4 \cdot 10^{-4} \end{array}$$

1

$$\begin{aligned} & 1.02 \cdot 10^7 - 7.1 \cdot 10^6 = \\ & = 1.02 \cdot 10^7 - 7.1 \cdot \frac{1}{10} \cdot \frac{10 \cdot 10^6}{10^7} = \\ & = 1.02 \cdot 10^7 - 0.71 \cdot 10^7 = \\ & = (1.02 - 0.71) \cdot 10^7 = \\ & = 0.31 \cdot 10^7 = 0.31 \cdot 10 \cdot 10^{-1} \cdot 10^7 = \underline{\underline{3.1 \cdot 10^6}} \end{aligned}$$

$$1.02 \cdot 10^7 \cdot 7.1 \cdot 10^6 =$$

$$= (1.02 \cdot 7.1) \cdot (10^7 \cdot 10^6)$$

$$= 7.242 \cdot 10^{13}$$

$$\sqrt{1.44 \cdot 10^6} =$$

$$= \underbrace{\sqrt{1.44}}_{1.2} \cdot \underbrace{\sqrt{10^6}}_{10^3} = 1.2 \cdot 10^3$$

$$\sqrt{1.6 \cdot 10^{-7}} =$$

$$= \sqrt{\underbrace{1.6 \cdot 10 \cdot 10 \cdot 10}_{16} \cdot \underbrace{10^{-7}}_{10^{-8}}}$$

$$= \sqrt{16} \cdot \sqrt{10^{-8}} = 4 \cdot 10^{-4}$$

$$\sqrt{3.6 \cdot 10^{101}} =$$

$$= \sqrt{\underbrace{3.6 \cdot 10 \cdot 10^{-1}}_{36} \cdot \underbrace{10^{101}}_{10^{100}}}$$

$$= \sqrt{36} \cdot \sqrt{10^{100}} = 6 \cdot 10^{50}$$

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3. Unità SI / equivalenze

m metro

kg massa

s tempo

A cor. elettrica

K temperatura

mol mole

cd "intensità di luce"

Pressione = forza / area
↓

$$Pa = N / m^2 = N \cdot m^{-2}$$

forza = massa · accel.
↓

$$N = kg \cdot m \cdot s^{-2}$$

$$Pa = N \cdot m^{-2} = kg \cdot m^{-1} \cdot s^{-2}$$

Pro Sissi multiplication:

d	10^{-1}	d	10^1
c	10^{-2}	h	10^2
m	10^{-3}	k	10^3
M	10^{-6}	M	10^6
n	10^{-9}	G	10^9
p	10^{-12}	T	10^{12}
f	10^{-15}	P	10^{15}
a	10^{-18}	E	10^{18}
z	10^{-21}	Z	10^{21}
y	10^{-24}	Y	10^{24}

$$4.1 \text{ N/cm}^2 \rightarrow \overset{41}{\downarrow} \text{ kPa}$$

$$4.1 \frac{\text{N}}{\text{cm}^2} = \times \text{ kPa}$$

$$4.1 \frac{\text{N}}{(\text{cm})^2} = \times \text{ k} \left(\frac{\text{N}}{\text{m}^2} \right)$$

$$4.1 \frac{N}{(cm)^2} = x \cdot k \left(\frac{N}{m^2} \right)$$

$$4.1 \frac{N}{(10^{-2} m)^2} = x \cdot 10^3 \frac{N}{m^2}$$

"
 $(10^{-2})^2 m^2$

$$4.1 \frac{\cancel{N}}{10^{-4} \cancel{m^2}} = x \cdot 10^3 \frac{\cancel{N}}{\cancel{m^2}}$$

$$\frac{4.1}{10^{-4}} = x \cdot 10^3$$

$$\frac{4.1}{\cancel{10^{-4}}} \cdot \cancel{10^{-4}} = x \cdot \underbrace{10^3 \cdot 10^{-4}}_{10^{-1}}$$

$$x = 4.1 \cdot 10^1 = 41$$

$$4.1 = x \cdot 10^{-1}$$

$$7.2 \frac{t}{h} = x \frac{m}{s}$$

$\uparrow$
 $60 \cdot 60 \text{ s}$

$\uparrow$
 2

$$7.2 \cdot \frac{\cancel{t}}{3600 \cancel{s}} = x \cdot \frac{10^{-3} \cancel{t}}{\cancel{s}}$$

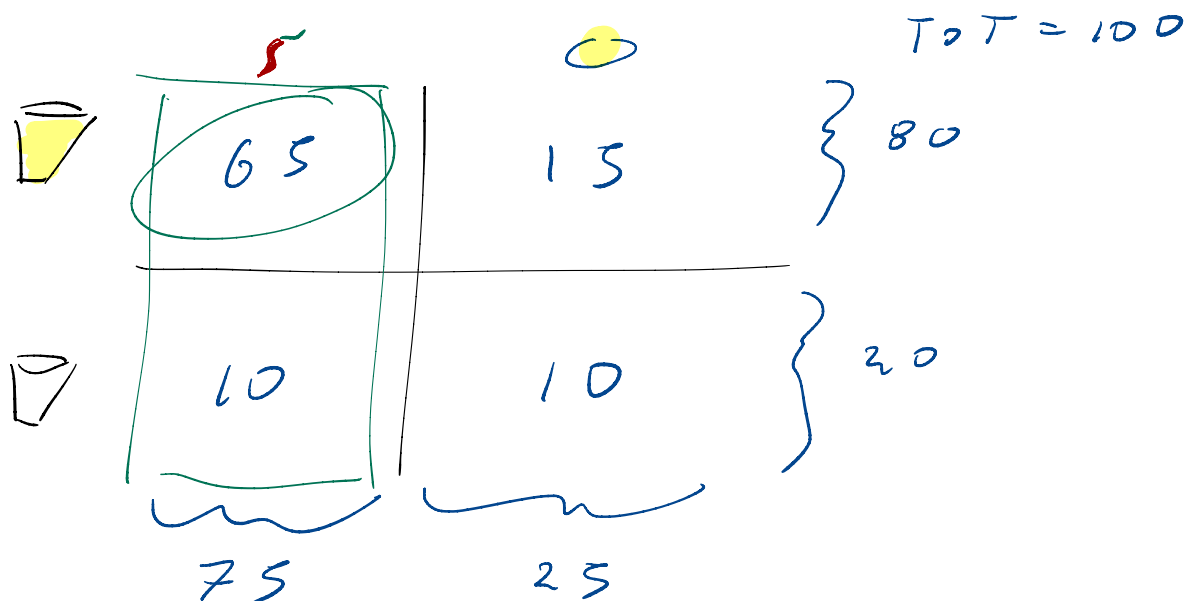
$$\frac{7.2}{3600} = x \cdot 10^{-3} \quad x = \frac{7.2 \cdot 10^3}{3600} = 2$$

es B 20. VII. 2020

In un certo paese, tre persone su quattro mangiano piccante. In quello stesso paese, l'ottanta per cento delle persone beve birra. Inoltre, due quinti di quelli che non mangiano piccante, non bevono birra.

$\hookrightarrow \sim 86.67\%$

A.1 – Che percentuale delle persone che mangiano piccante beve birra?



$$65 : 75 = x : 100$$

$$x = \frac{100 \cdot 65}{75} \approx 86.67$$