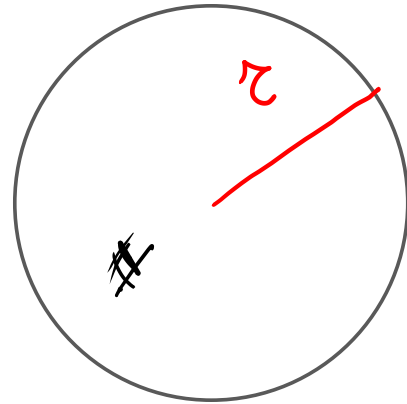


DIMENSIONI



$$r = 1 \text{ cm}$$

$$A = 4\pi r^2 = 4\pi (1 \text{ cm})^2 = 4\pi \text{ cm}^2$$

$$V = \frac{4}{3}\pi r^3 = \frac{4}{3}\pi (1 \text{ cm})^3 = \frac{4}{3}\pi \text{ cm}^3$$

$$A + V = \underline{\text{NO SE POL!}}$$

$$[r] = [L]$$

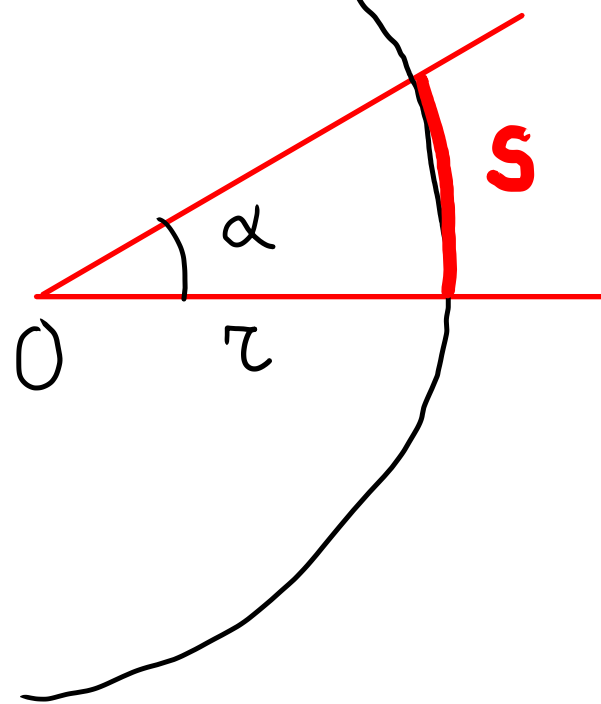
$$[A] = [L]^2$$

$$[V] = [L]^3$$

$$[\text{Energia}] = [M][L]^2 \cdot [T]^{-2}$$

$$[\text{Grandezza Fisica Qualsiasi}] = [M]^\alpha [L]^\beta [T]^\delta \dots$$

ANGOLI



$$\alpha = \frac{s}{r}$$

$$[\alpha] = \frac{[L]}{[L]}$$

è adimensionale!

angolo giro

360°

2π

rad

piatto

180°

π

rad

retto

90°

$\frac{\pi}{2}$

rad

60°

$\frac{\pi}{3}$

rad

45°

$\frac{\pi}{4}$

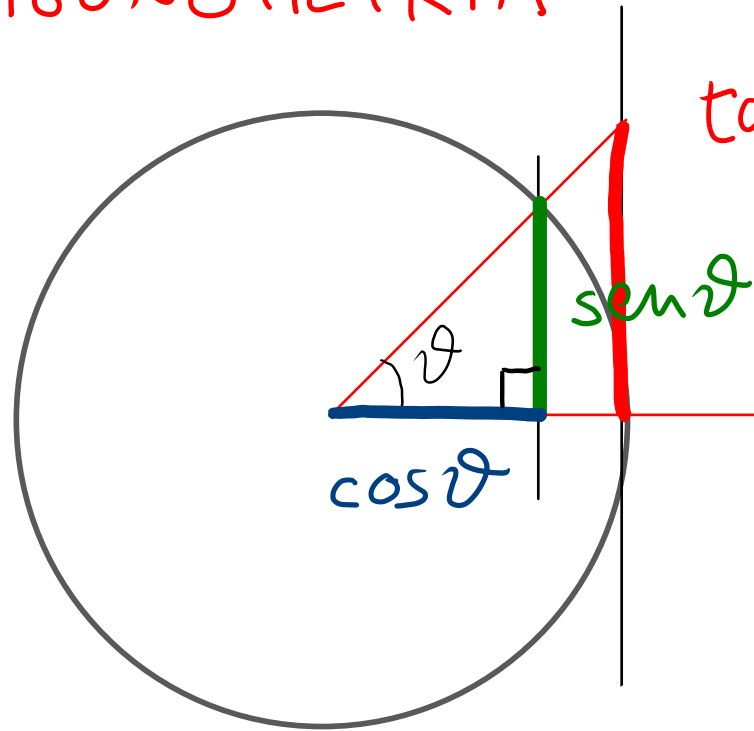
rad

30°

$\frac{\pi}{6}$

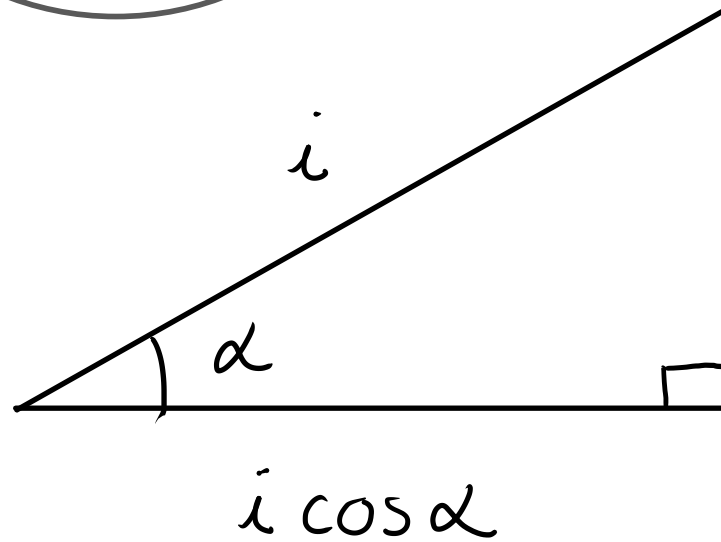
rad

TRIGONOMETRIA



$$\tan \vartheta = \frac{\sin \vartheta}{\cos \vartheta}$$

$$\sin^2 \vartheta + \cos^2 \vartheta = 1$$



$$i \sin \alpha$$

CIFRE SIGNIFICATIVE

800 m
↑
cifra
significativa
 $8 \cdot 10^2$ m

$$\begin{aligned} (80 \cancel{0} \pm 1) \text{ m} \\ (8 \cancel{0} 0 \pm 10) \text{ m} \end{aligned}$$

$$(800 \pm 100) \text{ m}$$

$$\begin{aligned} \boxed{1,5} \cdot 10^2 \cdot 3,21 &= \boxed{4,815} \cdot 10^2 = 4,8 \cdot 10^2 \\ \text{2 cifre} &\quad \text{2 cifre} \end{aligned}$$

$$0,0058 = 5,8 \cdot 10^{-3}$$

$$1,0058$$

2 cifre significative

5 cifre significative

HOW TALL IS JOE BIDEN ?

$$h = 6 \text{ piedi e } 0 \text{ pollici}$$

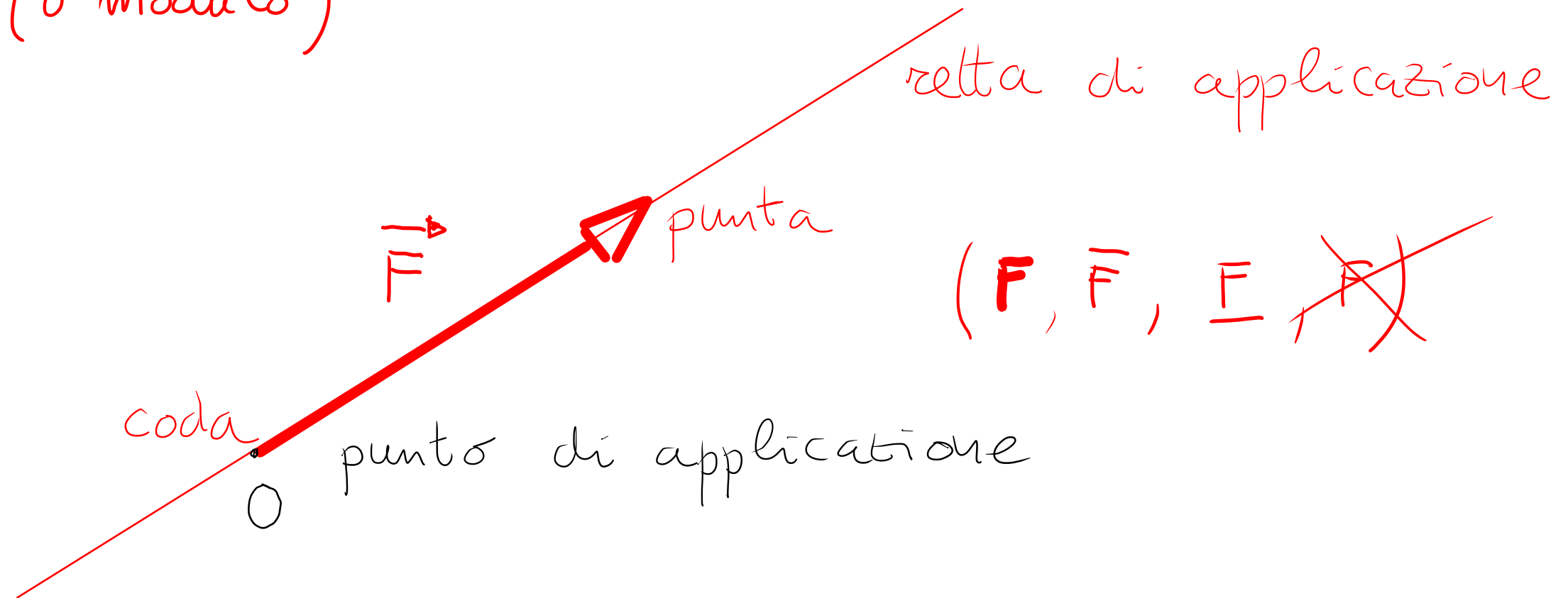
$$= 6 \text{ ~~piedi~~} \cdot \left(\frac{12 \text{ pollici}}{1 \text{ ~~piedi~~}} \right) = 72 \text{ pollici}$$

$$1 \text{ pollice} = 2,54 \text{ cm}$$

$$h = 72 \text{ ~~pollici~~} \left(\frac{2,54 \text{ cm}}{1 \text{ ~~pollice~~}} \right) = 182,88 \text{ cm} = 183 \text{ cm}$$

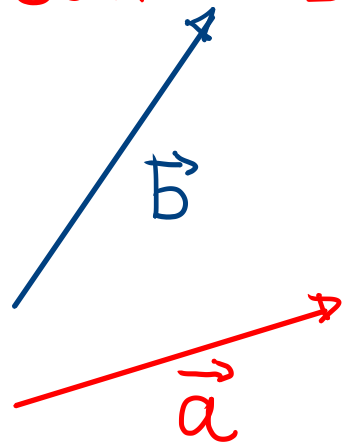
VETTORI

- intensità (o modulo)
- direzione
- verso



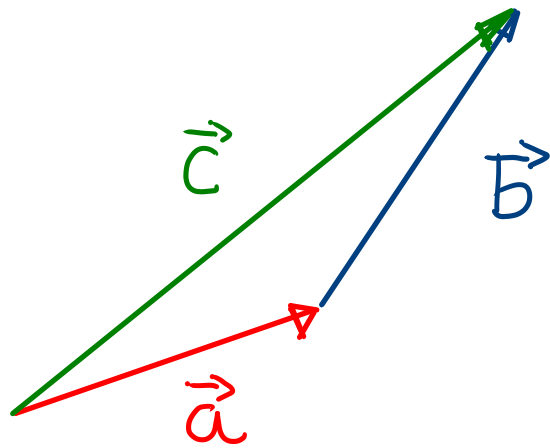
Modulo di $\vec{F}$: $|\vec{F}|$ o F

SOMMA DI VETTORI

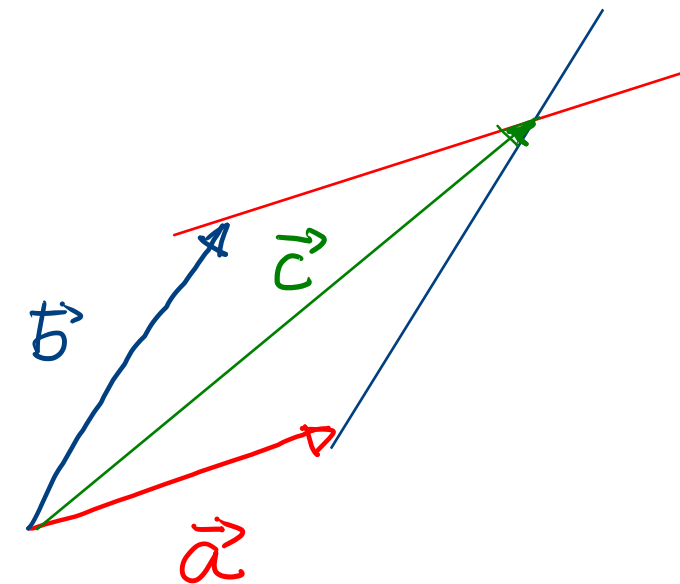


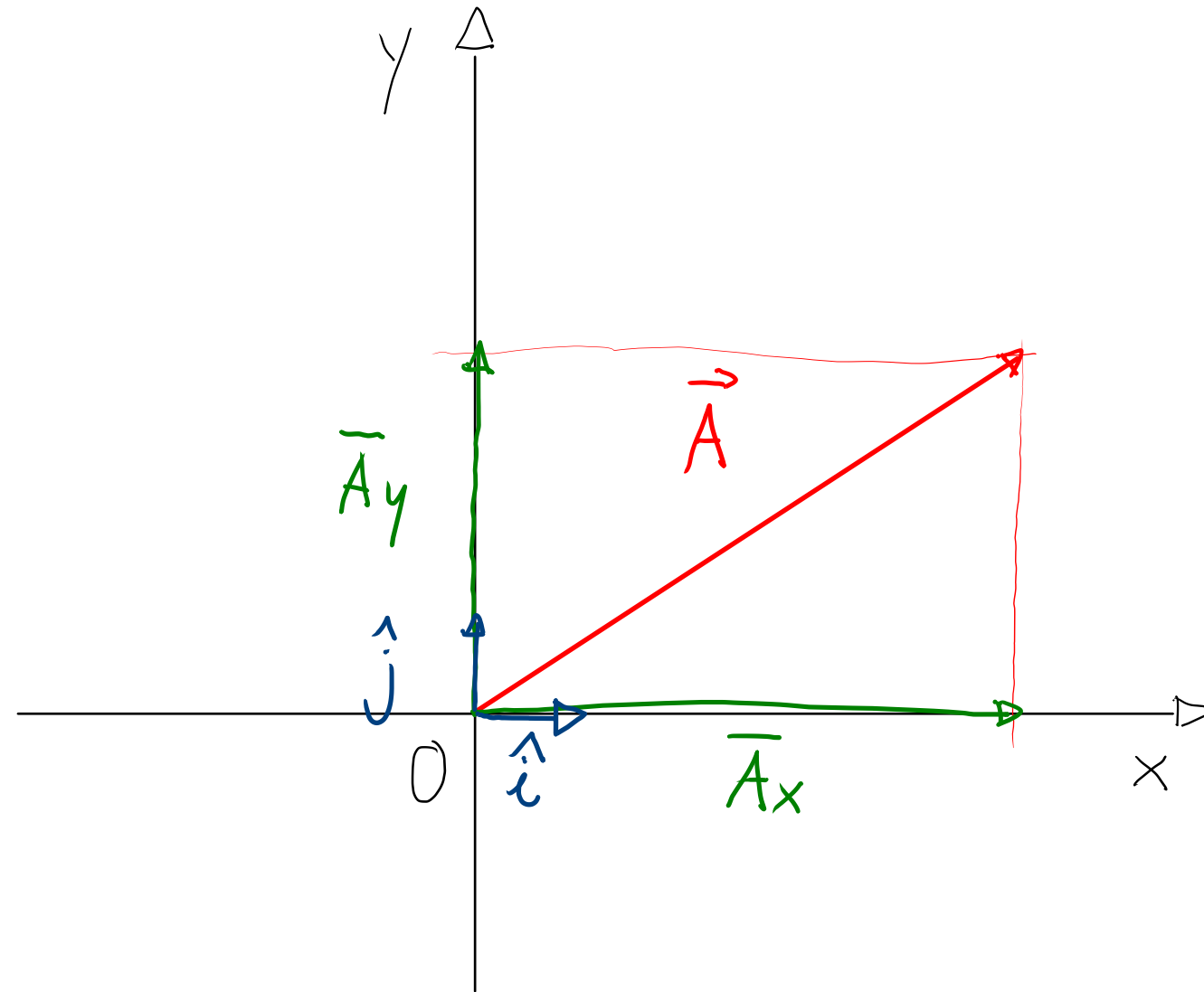
$$\vec{c} = \vec{a} + \vec{b}$$

1) metodo punta-coda



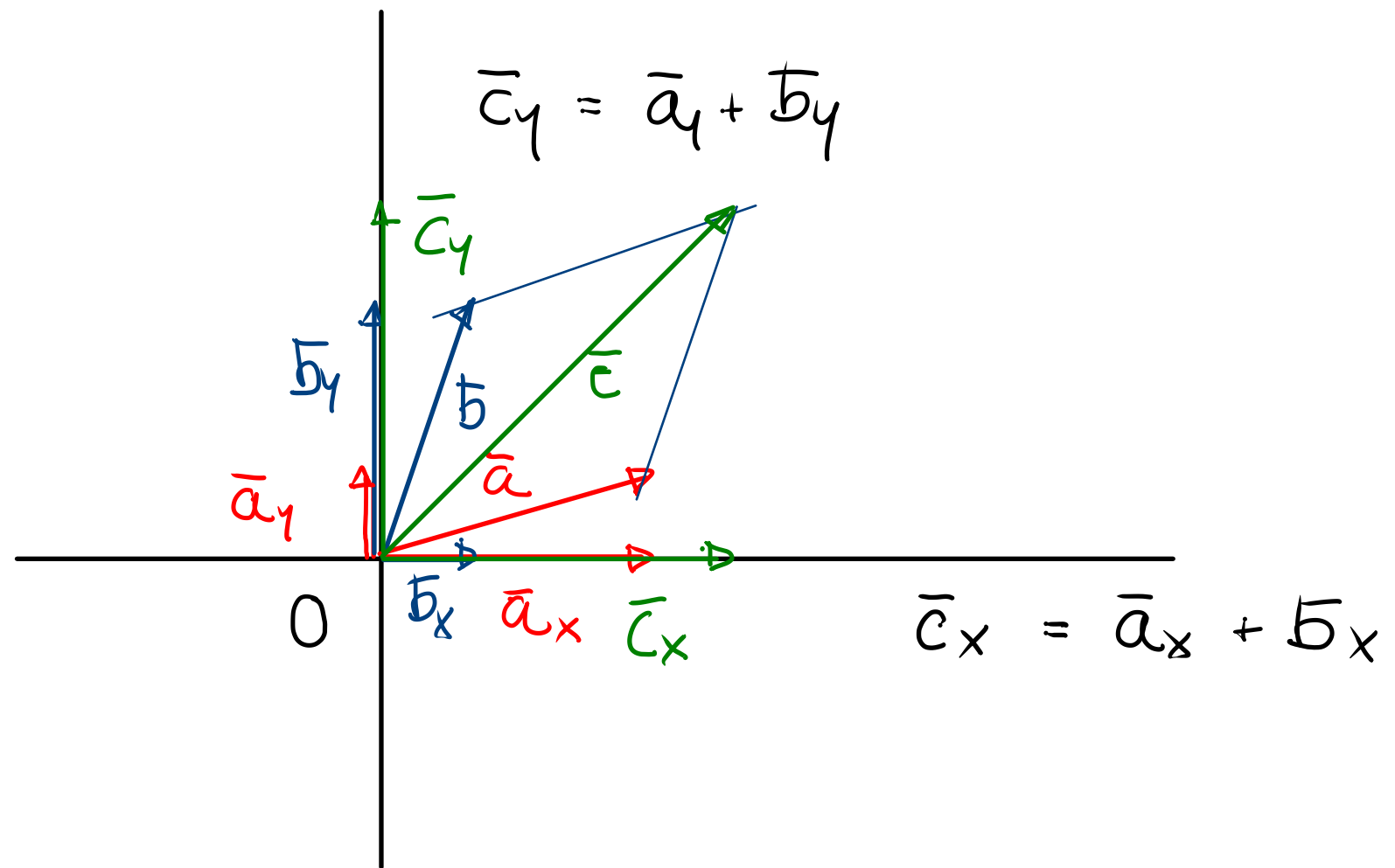
2) regola del parallelogramma



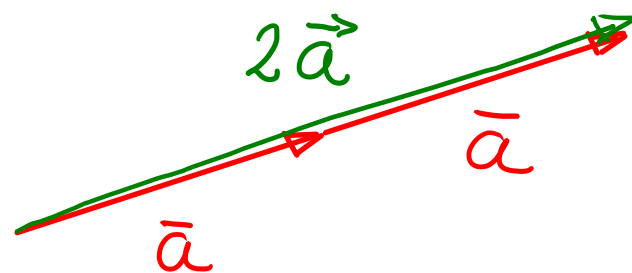


$$\vec{A} = \bar{A}_x + \bar{A}_y$$

3) Mediante le componenti



PRODOTTO DI UN VETTORE PER UNO SCALARE



$$m \vec{a}$$

$$m \in \mathbb{R}$$

$$|m \vec{a}| = |m| \cdot |\vec{a}|$$

valore
assoluto

modulo

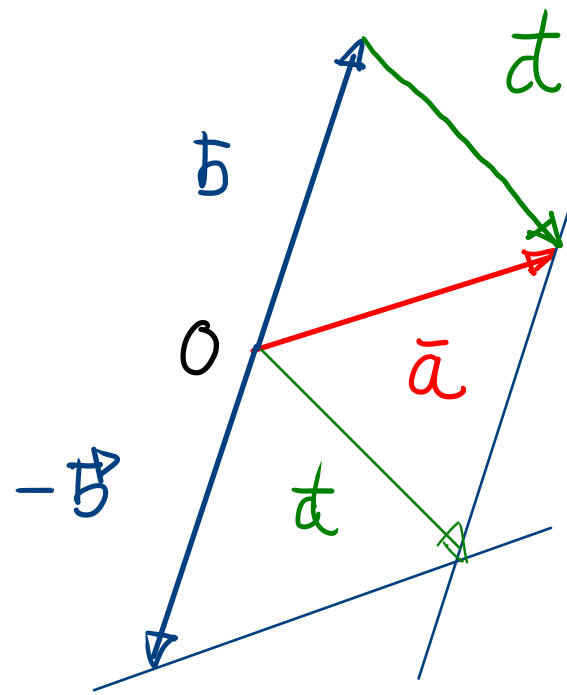
direzio-
ne verso

$\vec{a}$ è la stessa di $\vec{a}$
 $m > 0$ è lo stesso di $\vec{a}$
 $m < 0$ è opposto

NOTA : $-\vec{a} = -1 \cdot \vec{a}$

stesso modulo di $\vec{a}$
stessa direzione
verso opposto

$$\vec{d} = \vec{a} - \vec{b} = \bar{a} + (-\vec{b})$$



parte dalla punta di $\vec{b}$
ed arriva alla punta di $\bar{a}$

$$d_x = \bar{a}_x - b_x$$

$$d_y = \bar{a}_y - b_y$$