T $\quad\quad$ $\bar{v}(x, y, z; t)$

∇

$$\nabla \times \bar{E} = -\frac{\partial \bar{B}}{\partial t}$$

$$\nabla \times \bar{H} = \bar{J} + \frac{\partial \bar{D}}{\partial t}$$

$$\nabla \cdot \bar{D} = \rho_v$$

$$\nabla \cdot \bar{B} = 0$$

$$|e| = 1{,}602 \cdot 10^{-19}\,As$$

$\bar{E}$ electric field $\frac{V}{m}$

$\bar{B}$ magnetic flux density $\frac{Vs}{m^2} = T$

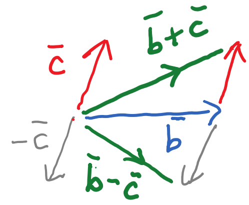
$\bar{H}$ magnetic field $\frac{A}{m}$

$\bar{D}$ electric flux density $\frac{As}{m^2}$

$\bar{J}$ current density $\frac{A}{m^2}$

ρ_v electric charge density $\frac{As}{m^3}$

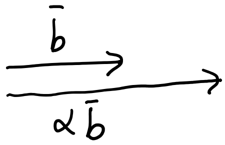
$\bar{b} + \bar{c}$



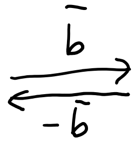
$\bar{b} - \bar{c} = \bar{b} + (-\bar{c})$

$\alpha \bar{b}$

$\uparrow$ $\alpha = 2$

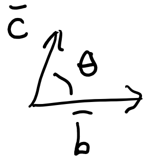


$\alpha = -1:$

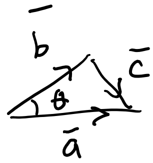


DOT PRODUCT:

$$\bar{b} \cdot \bar{c} = |\bar{b}||\bar{c}| \cos\theta$$



COSINE RULE



$$c^2 = a^2 + b^2 - 2ab\cos\theta$$

$$\bar{c} = \bar{a} - \bar{b}$$

$$\bar{c} \cdot \bar{c} = c^2 = (\bar{a} - \bar{b}) \cdot (\bar{a} - \bar{b}) = a^2 + b^2 - 2\bar{a} \cdot \bar{b}$$

$$\bar{a} \cdot \bar{b} = \bar{b} \cdot \bar{a}$$

CROSS PRODUCT

$$|\bar{b} \times \bar{c}| = |\bar{b}||\bar{c}| \sin\theta$$

$\bar{b} \times \bar{c}$