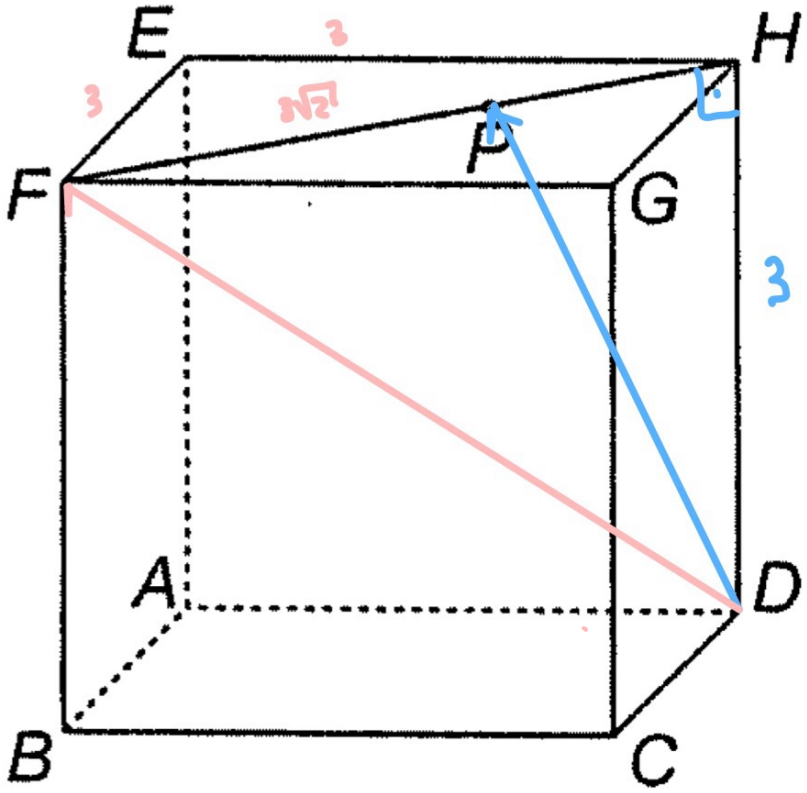
Aula 6 (Exercício 9)



Sem trigonometria ☺

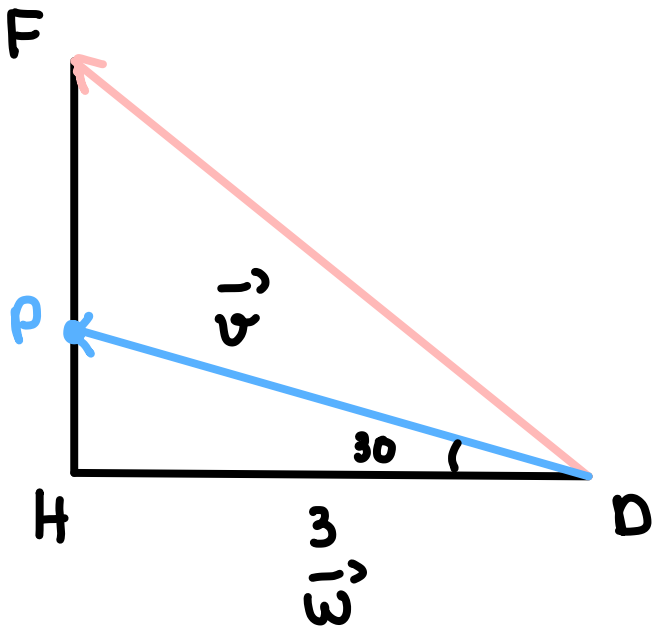
→ projeção ortogonal

$$\vec{\omega} = \text{proj}_{\vec{\omega}} \vec{v}$$

$$\Downarrow$$

$$3 = \left| \frac{\vec{v}\cdot\vec{\omega}}{\|\vec{\omega}\|^2}\cdot\vec{\omega} \right| = \frac{|\vec{v}\cdot\vec{\omega}|}{\|\vec{\omega}\|}$$

$$\Rightarrow \|\vec{v}\cdot\vec{\omega}\| = 9$$



definição de produto escalar

$$\Rightarrow \|v\|\|w\|\cos 30 = |\vec{v}\cdot\vec{\omega}| = 9$$

$$\|\vec{DP}\| = \|v\| = \frac{9}{3\cdot\frac{\sqrt{3}}{2}} = \frac{6}{\sqrt{3}} = 2\sqrt{3}$$

$$\|DH\|^2 + \|HP\|^2 = \|DP\|^2 = 4.3$$

$$\|PH\|^2 = 12 - 9$$

$$\|PH\| = \sqrt{3}$$