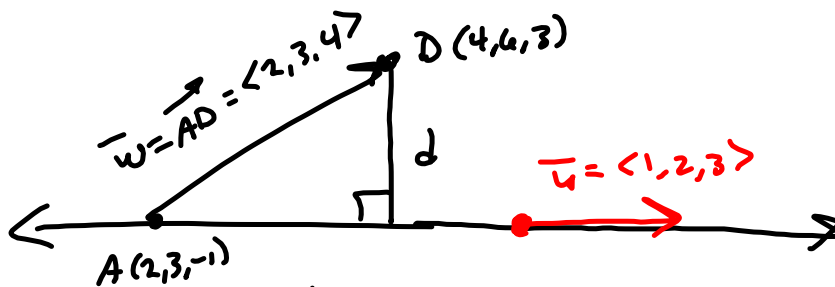


Distance from  $D$  to ~~plane  $P$~~  line  $L$



$$\sin \theta = \frac{d}{|\vec{w}|} \Rightarrow$$

$$d = |\vec{w}| \sin \theta = |\vec{w}| \frac{|\vec{u} \times \vec{w}|}{|\vec{w}| |\vec{u}|} = \frac{|\vec{u} \times \vec{w}|}{|\vec{u}|}$$

$$\begin{aligned} & \frac{\begin{matrix} \langle 2, 3, 4 \rangle \\ \times \langle 1, 2, 3 \rangle \\ \hline \langle 1, -2, 1 \rangle = \vec{w} \times \vec{v} \end{matrix}}{\text{So, } \vec{u} \times \vec{w} = \langle -1, 2, -1 \rangle} = \frac{\sqrt{1+4+1}}{\sqrt{1+4+9}} = \frac{\sqrt{6}}{\sqrt{14}} = \sqrt{\frac{3}{7}} \\ & = \frac{\sqrt{3}\sqrt{7}}{7} \\ & = \frac{\sqrt{21}}{7} \end{aligned}$$