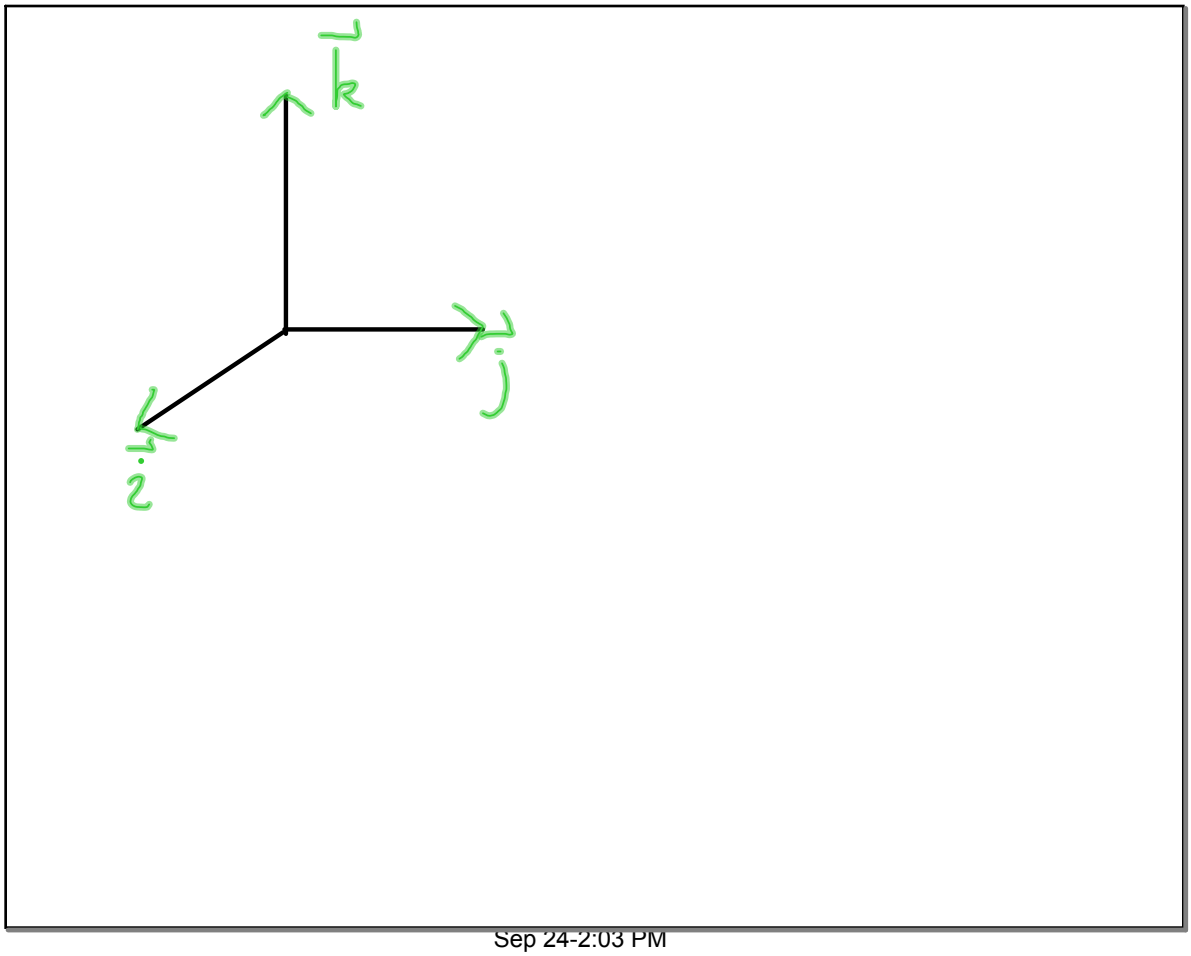
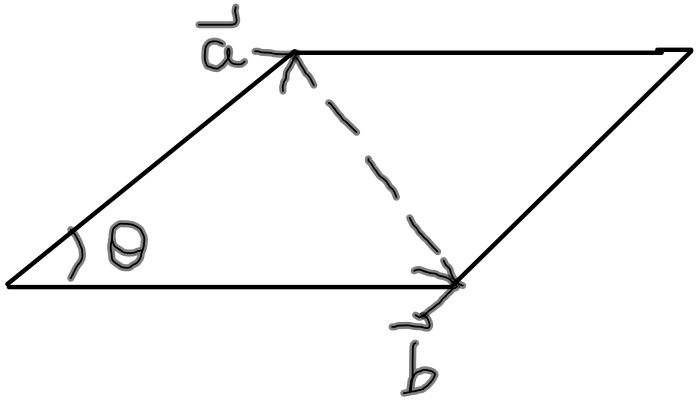
$$\begin{vmatrix} a & b \\ c & d \end{vmatrix} = ad - cb \qquad +(-1)^{1+2}$$

$$\begin{vmatrix} a_1 & a_2 & a_3 \\ b_1 & b_2 & b_3 \\ c_1 & c_2 & c_3 \end{vmatrix} = (-1)^{1+1} a_1 \begin{vmatrix} b_2 & b_3 \\ c_2 & c_3 \end{vmatrix} + (-1)^{1+2} (-a_2) \begin{vmatrix} b_1 & b_3 \\ c_1 & c_3 \end{vmatrix} + (-1)^{1+3} a_3 \begin{vmatrix} b_1 & b_2 \\ c_1 & c_2 \end{vmatrix}$$

Sep 24-1:27 PM



Sep 24-2:03 PM



$$A = 2\,\text{Area}(\triangle)$$
$$= 2\cdot\frac{1}{2}|\vec{a}||\vec{b}|\sin(\theta)$$

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$$(a+b+c)^2$$
$$= a^2+b^2+c^2+2ab+2ac+2bc$$

$$(a+b)^2$$
$$= a^2+b^2+2ab$$

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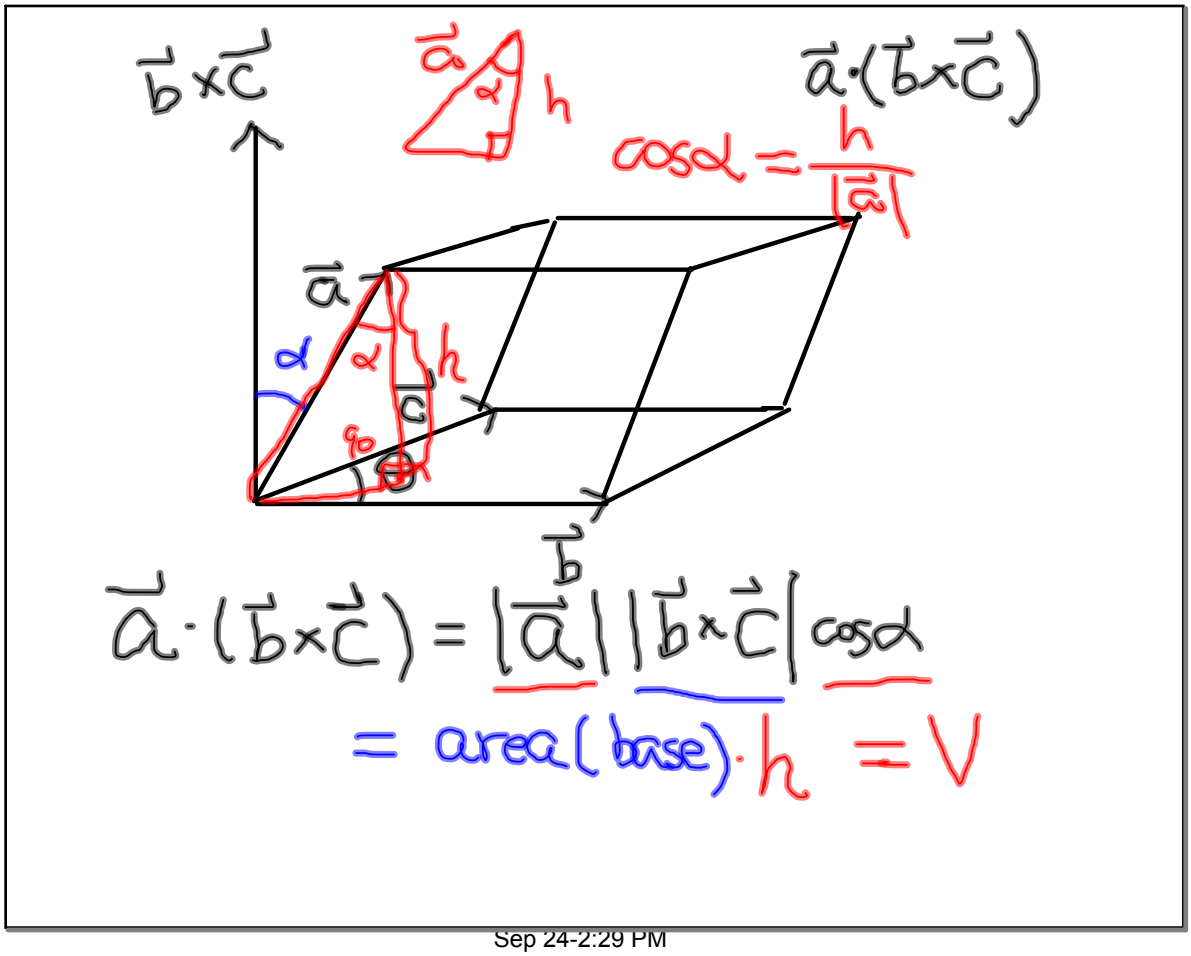

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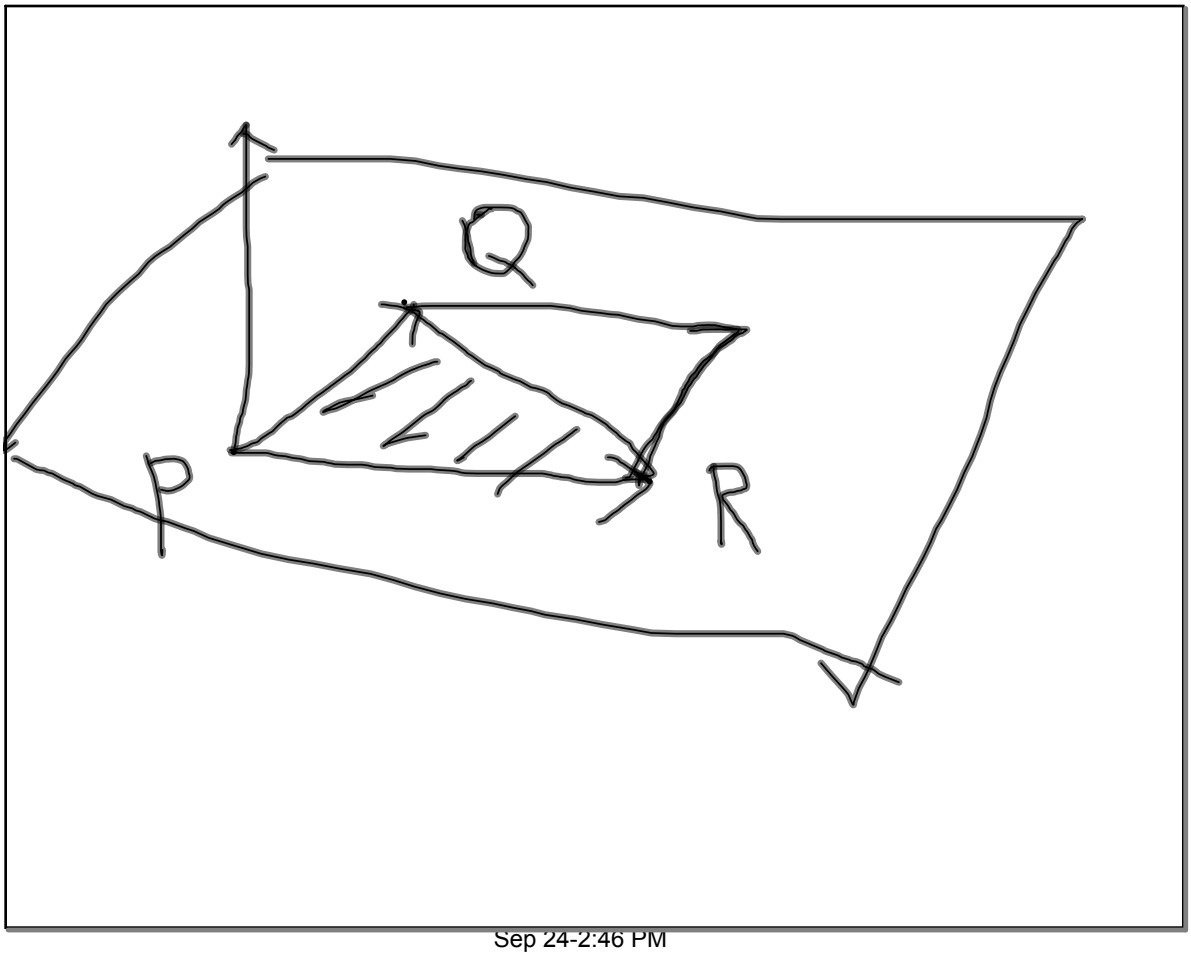

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