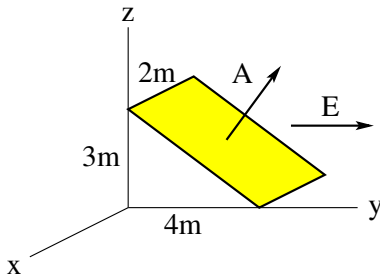Consider a rectangular sheet oriented perpendicular to the yz plane as shown and positioned in a uniform electric field $\vec{E} = (2\hat{j})$N/C.

(a) Find the area A of the sheet.

(b) Find the angle between $\vec{A}$ and $\vec{E}$.

(c) Find the electric flux Φ_E through the sheet.

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