Electric Flux: Application (3)
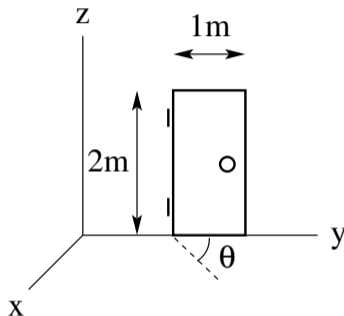
The room shown below is positioned in an electric field $\vec{E} = (3\hat{i} + 2\hat{j} + 5\hat{k})$N/C.

(a) What is the electric flux Φ_E through the closed door?
(b) What is the electric flux Φ_E through the door opened at $\theta = 90°$?
(c) At what angle θ_1 is the electric flux through the door zero?
(d) At what angle θ_2 is the electric flux through the door a maximum?

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