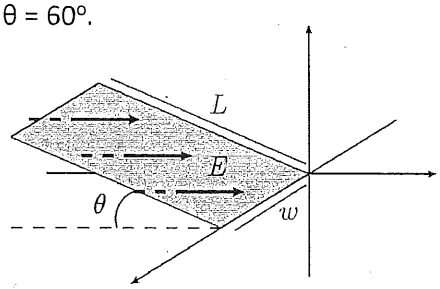
Name: _____

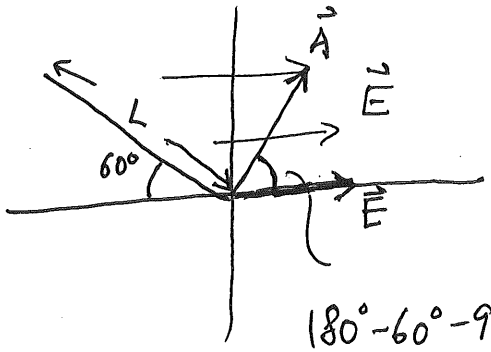
PHY 232 Summer 2016 Class Work

Class 4. Electric Flux

An electric field with magnitude E_0 = 8 V/m is passing through a leaning plane with length L = 2 m and width w = 5 m. θ = 60°.



(a) Calculate the electric flux through the plane in Nm2/C.



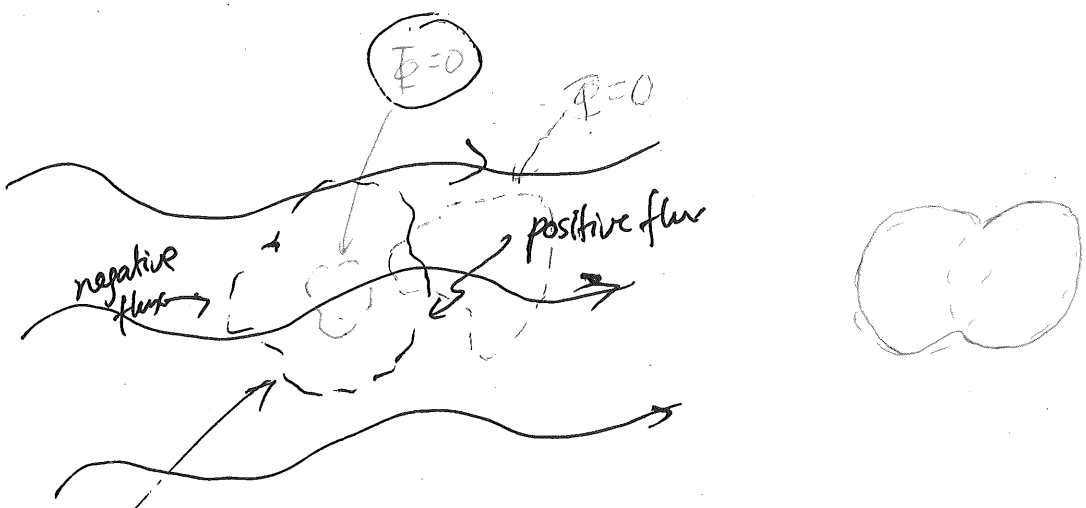
$180° - 60° - 90° = 30°$.

(b) At what angle of θ would the electric flux be maximized?

$\Phi = |\vec{E}||\vec{A}|\cos\alpha$ is max. when $\cos\alpha = 1 \Rightarrow \alpha = 0°$.

i.e. when $\theta = 90° - \alpha = 90°$.

(c) At what angle of θ would the electric flux be 0?



Water in $\Rightarrow$ ~~positive~~ negative flux

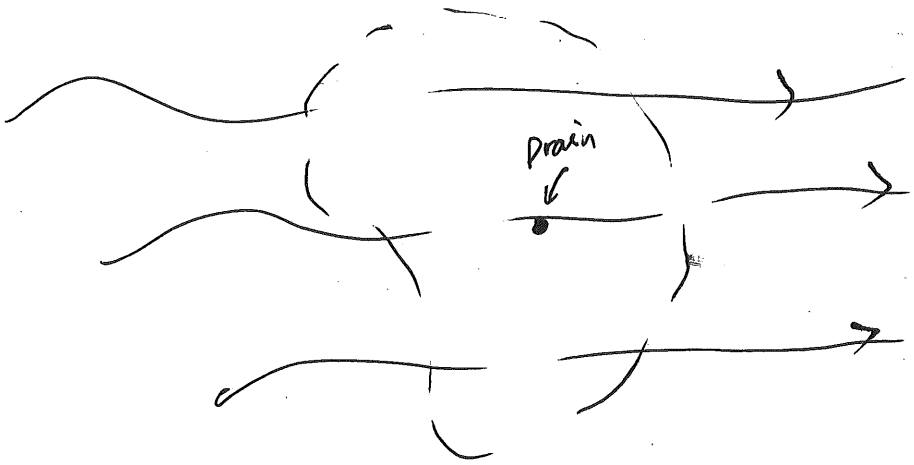
Water out $\Rightarrow$ ~~negative~~ positive flux

$\Phi = 0$ if nothing happen to the water inside the bubble.

~~If there~~

Independent of the bubble size and ~~sp~~ shape, or even the details of the water flow.

With drain inside the bubble



Water out < water in ⇒ negative net flux.

With source in.

Water out > water in ⇒ positive net flux.