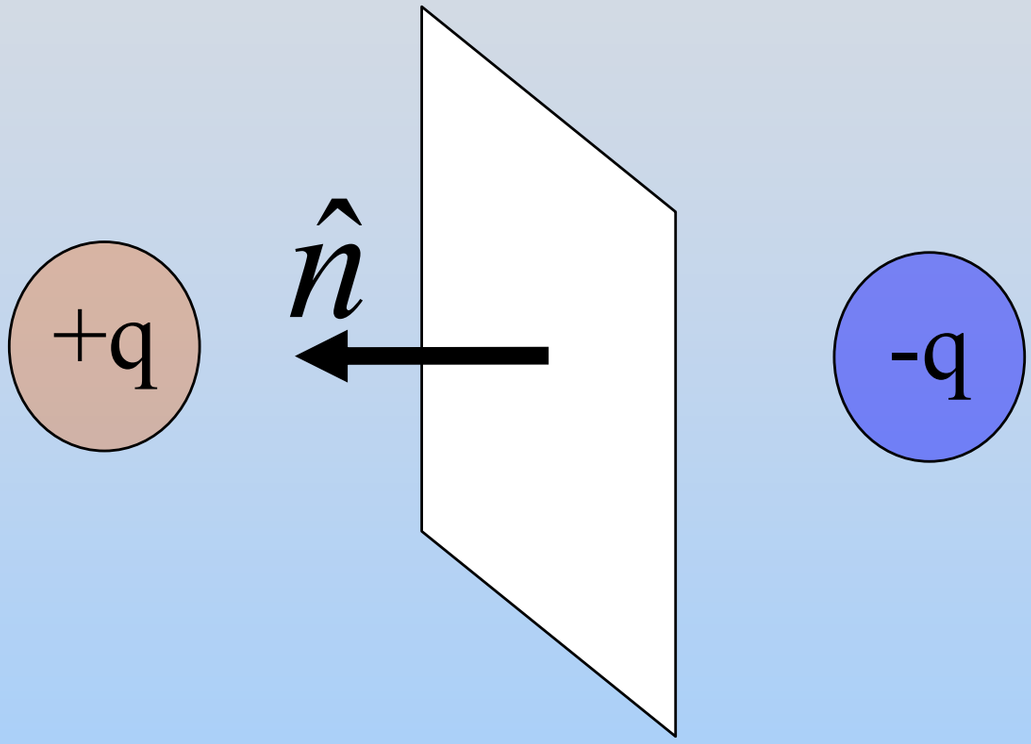
Gauss' Law

Wednesday, 28 May 2025

Concept Question: Flux

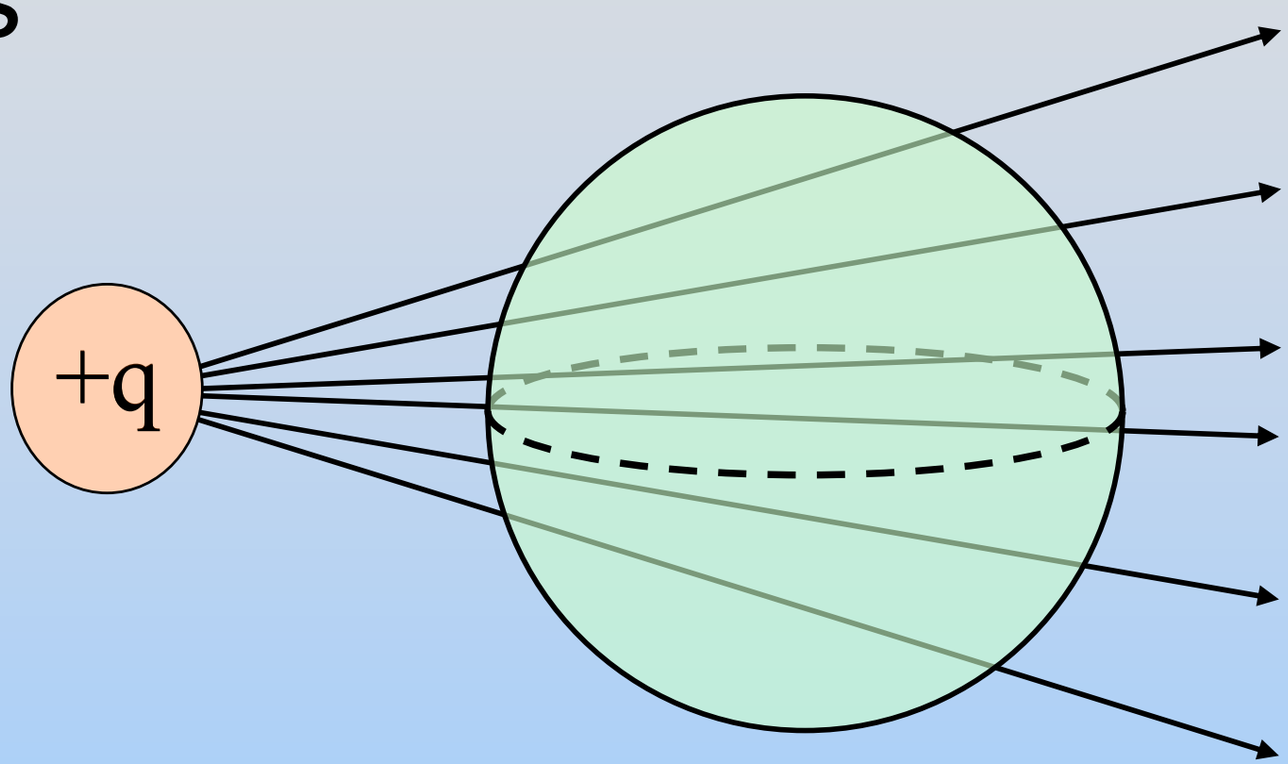
The electric flux through the planar surface below (positive unit normal to left) is:



1. positive.
2. negative.
3. zero.
4. I don’t know

Concept Question: Flux thru Sphere

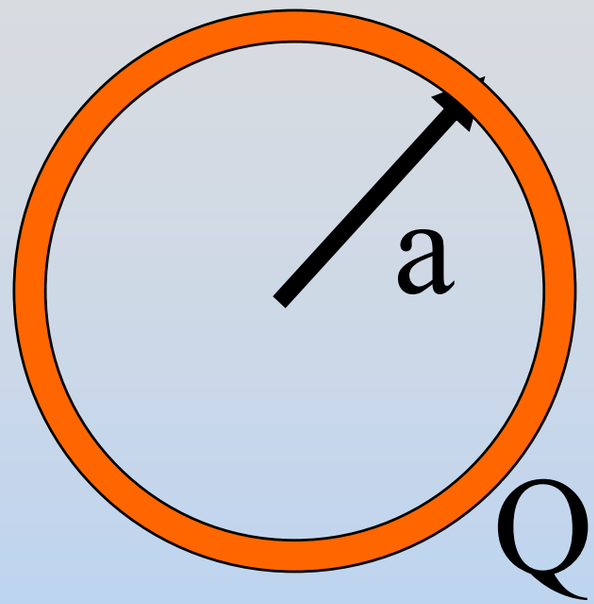
The total flux through the below spherical surface is



1. positive (net outward flux).
2. negative (net inward flux).
3. zero.
4. I don’t know

Concept Question: Spherical Shell

We just saw that in a solid sphere of charge the electric field grows linearly with distance. Inside the charged spherical shell at right (r<a) what does the electric field do?



1. Constant and Zero
2. Constant but Non-Zero
3. Still grows linearly
4. Some other functional form (use Gauss' Law)
5. Can't determine with Gauss Law

Concept Question: Slab of Charge

Consider positive, semi-infinite (in x & y) flat slab

z-axis is perp. to the sheet, with center at z = 0.

At the plane's center (z = 0), **E**

1. points in the positive z-direction.
2. points in the negative z-direction.
3. points in some other (x,y) direction.
4. is zero.
5. I don't know