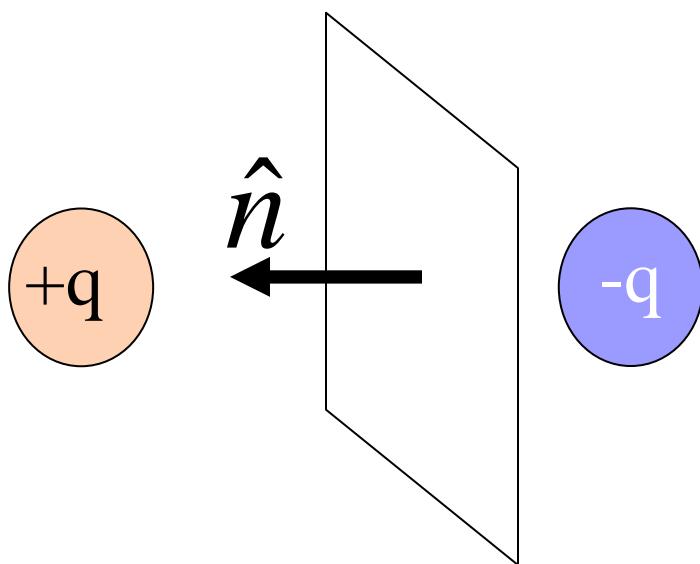


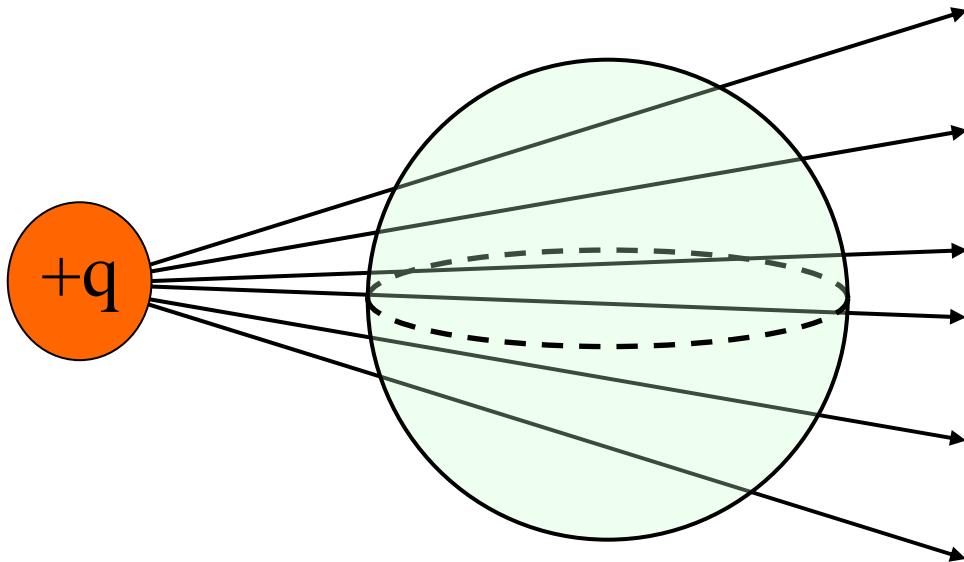
Flux Direction

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



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

Flux Through Sphere



The total flux through the above spherical surface is

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

Should We Use Gauss' Law?

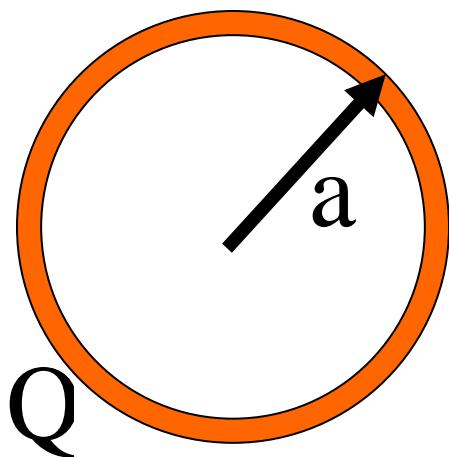
For which of the following uniform charge distributions can we use Gauss' Law to determine the electric field?

- A. Concentric nested spherical shells
 - B. Non-concentric nested spherical shells
 - C. Finite line of charge
 - D. Infinite line of charge
 - E. Thin, infinite, sheet of charge
 - F. Thick, infinite, slab of charge
-
- 1. None of them
 - 2. All of them
 - 3. A, B, C only
 - 4. D, E, F only
 - 5. A, D, E, F only
 - 6. C, D only
 - 7. A, D, E only
 - 8. C, D, E, F only

Spherical Shell

We just saw that in a solid sphere of charge the electric field grows

linearly with distance.



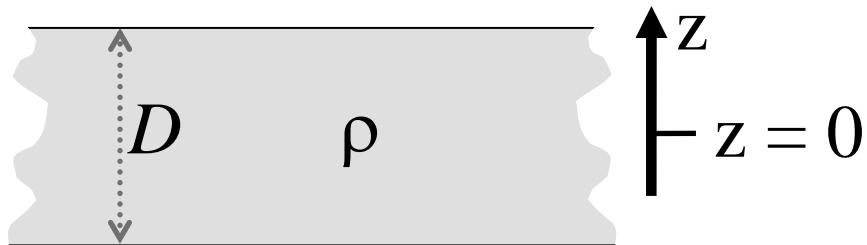
Inside the charged spherical shell at left ($r < a$) what does the electric field do?

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

E Field from Slab

A positively charged, semi-infinite flat slab has thickness D.

The z-axis is perpendicular to the sheet, with center at $z = 0$.



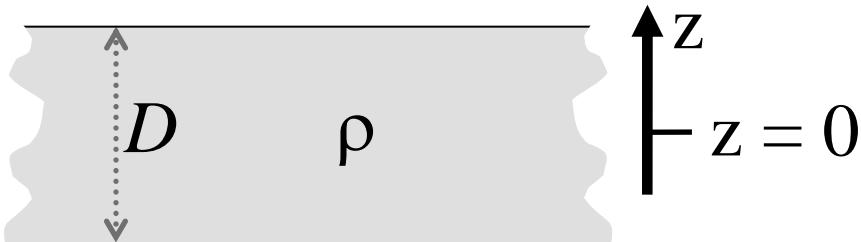
At the plane's center ($z = 0$), \mathbf{E}

1. points in the positive z-direction
2. points in the negative z-direction
3. is zero
4. I don't know

E Field from Slab

A positively charged, semi-infinite flat slab has thickness D.

The z-axis is perpendicular to the sheet, with at $z = 0$.



A distance z from its central plane,

1. E is constant

2. $E \propto \frac{1}{z^2}$

3. $E \propto \frac{1}{z}$

4. $E \propto z$

5. I don't know