I feel that my performance on Exam 1 is representative of my understanding of E&M at this point in time.

A. Strongly Agree
B. Agree
C. Neither Agree/Disagree
D. Disagree
E. Strongly Disagree

I feel that Exam 1 was a fair assessment.

A. Strongly Agree
B. Agree
C. Neither Agree/Disagree
D. Disagree
E. Strongly Disagree

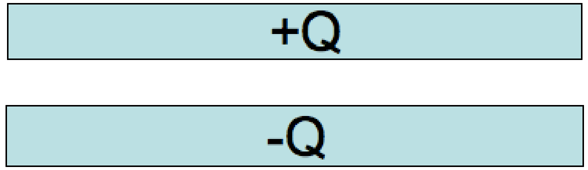
I feel that Exam 1 was aligned with what we have been doing (in class and on homework).

A. Strongly Agree
B. Agree
C. Neither Agree/Disagree
D. Disagree
E. Strongly Disagree

ANNOUNCEMENTS

- Goal: return graded Exam 1 by Monday
- Homework 6 Special problem 1
  - Solve Exam 1 and turn into Danny on Friday
  - Write a paragraph for each problem on what you needed to do to solve the problem correctly

Given a pair of very large, flat, conducting capacitor plates with total charges $+Q$ and $-Q$. Ignoring edges, what is the equilibrium distribution of the charge?



A. Throughout each plate

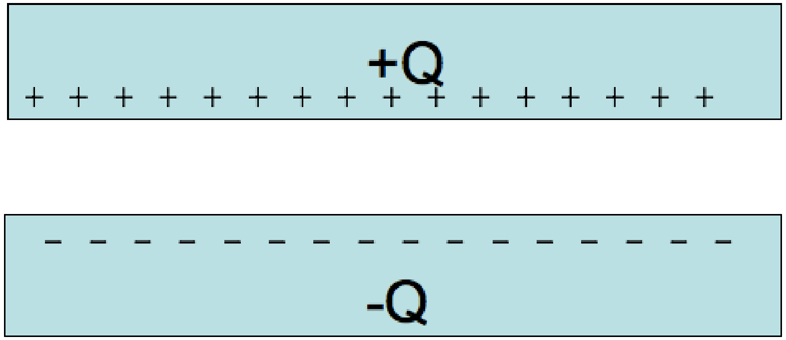
B. Uniformly on both side of each plate

C. Uniformly on top of $+Q$ plate and bottom of $-Q$ plate

D. Uniformly on bottom of $+Q$ plate and top of $-Q$ plate

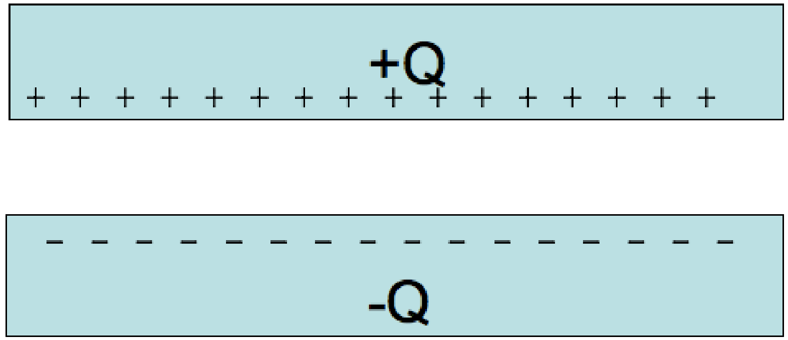
E. Something else

Given a pair of very large, flat, conducting capacitor plates with surface charge densities $+/-\sigma$, what is the E field in the region between the plates?



A. $\sigma/2\varepsilon_0$
B. σ/ε_0
C. $2\sigma/\varepsilon_0$
D. $4\sigma/\varepsilon_0$
E. Something else

Assume the plates are separated by a distance L and each have an area A. What is the capacitance of the plactes $C = Q/\Delta V$?



A. A/L

B. L/A

C. $\varepsilon_0 A/L$

D. $\varepsilon_0 L/A$

E. Something else

The eletric field between the shells is just that of a point charge. What is the electric potential difference between the outer shell ($r = b$) and the inner shell ($r = a$)?

A. $\frac{Q}{4\pi\varepsilon_0}\left(\frac{1}{b} - \frac{1}{a}\right)$

B. $\frac{Q}{4\pi\varepsilon_0}\left(\frac{1}{a} - \frac{1}{b}\right)$

C. $\frac{Q}{4\pi\varepsilon_0}\left(\frac{1}{b^2} - \frac{1}{a^2}\right)$

D. $\frac{Q}{4\pi\varepsilon_0}\left(\frac{1}{a^2} - \frac{1}{b^2}\right)$

E. Something else?

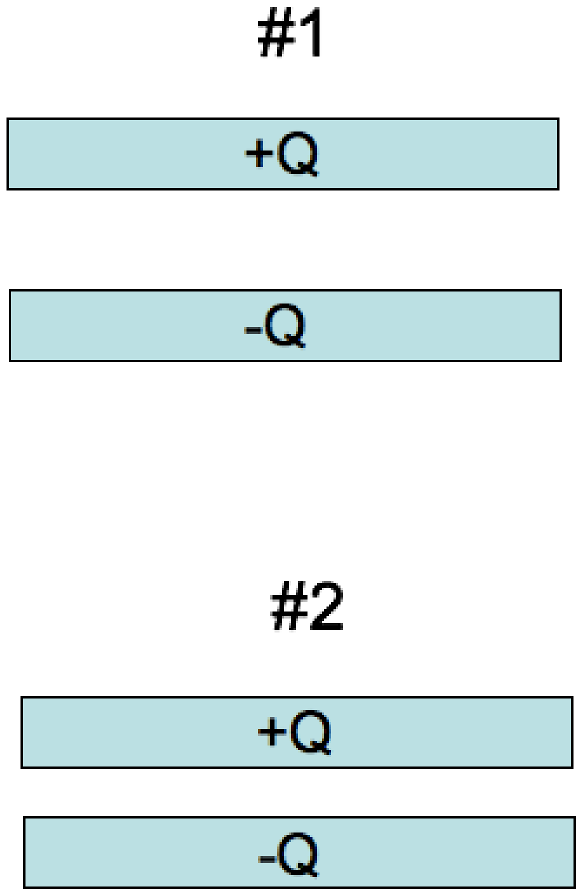
What is the sign of the potential difference between the outer shell ($r = b$) and the inner shell ($r = a$)?

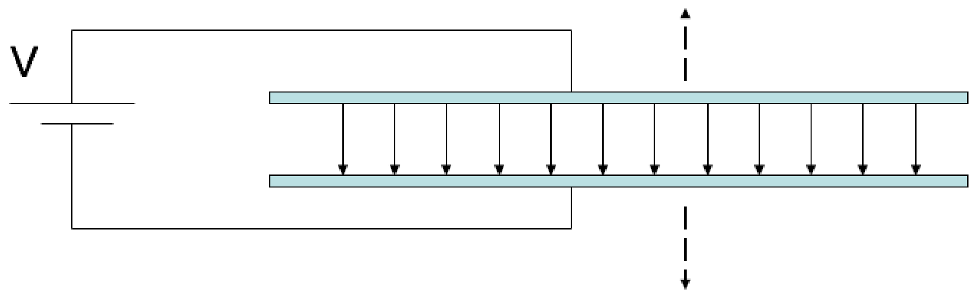
$$\Delta V = V(b) - V(a)$$

A. $\Delta V > 0$
B. $\Delta V < 0$
C. ???

You have two very large parallel plate capacitors, both with the same area and the same charge Q. Capacitor #1 has twice the gap of Capacitor #2. Which has more stored potential energy?

A. #1 has twice the stored energy
B. #1 has more than twice
C. They both have the same
D. #2 has twice the stored energy
E. #2 has more than twice.

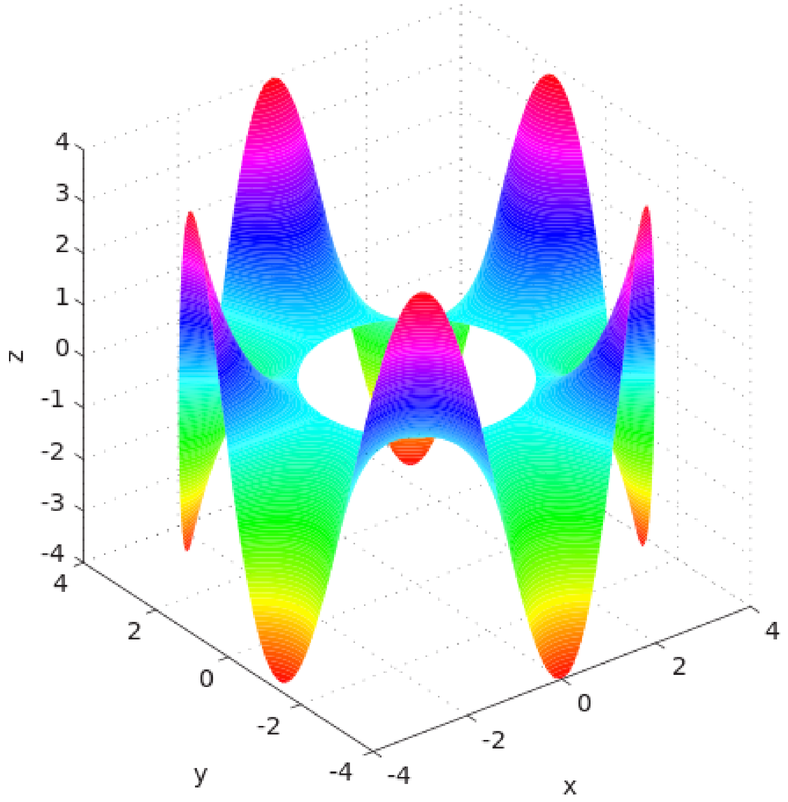


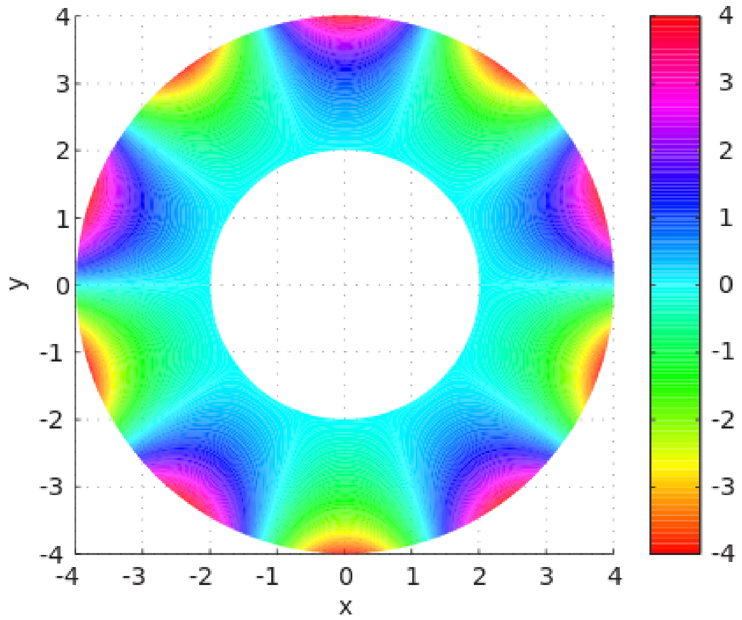


A parallel plate capacitor is attached to a battery which maintains a constant voltage difference V between the capacitor plates. While the battery is attached, the plates are pulled apart. The electrostatic energy stored in the capacitor

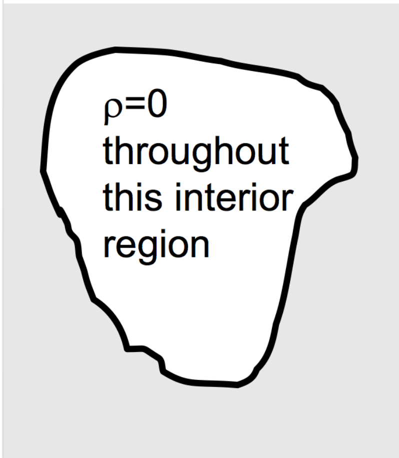
A. increases.
B. decreases.
C. stays constant.

LAPLACE'S EQUATION



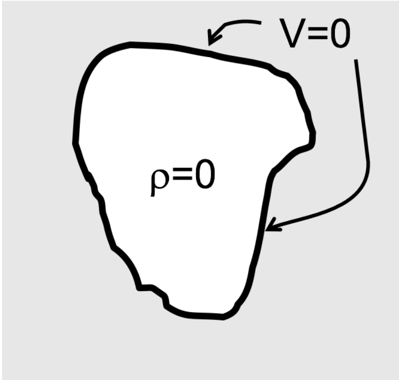


A region of space contains no charges. What can I say about V in the interior?



A. Not much, there are lots of possibilities for $V(r)$ in there
B. $V(r) = 0$ everywhere in the interior.
C. $V(r) =$constant everywhere in the interior

A region of space contains no charges. The boundary has V=0 everywhere. What can I say about V in the interior?



A. Not much, there are lots of possibilities for $V(r)$ in there
B. $V(r) = 0$ everywhere in the interior.
C. $V(r)$ =constant everywhere in the interior