

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

The electric 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. $\frac{Q}{4\pi\epsilon_0} \left(\frac{1}{b} - \frac{1}{a} \right)$

B. $\frac{Q}{4\pi\epsilon_0} \left(\frac{1}{a} - \frac{1}{b} \right)$

C. $\frac{Q}{4\pi\epsilon_0} \left(\frac{1}{b^2} - \frac{1}{a^2} \right)$

D. $\frac{Q}{4\pi\epsilon_0} \left(\frac{1}{a^2} - \frac{1}{b^2} \right)$

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. $\Delta V > 0$

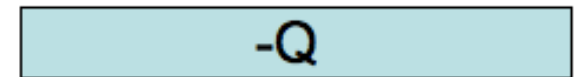
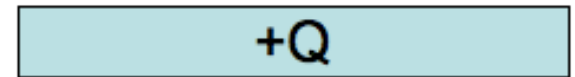
B. $\Delta V < 0$

C. ???

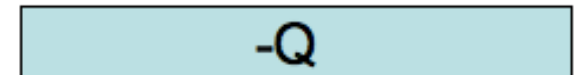
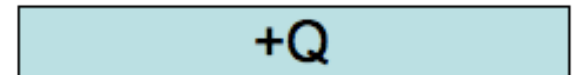
You have two very large parallel plate capacitors, both with the same area and the same charge Q . Capacitor #1 has twice the gap of Capacitor #2. Which has more stored potential energy?

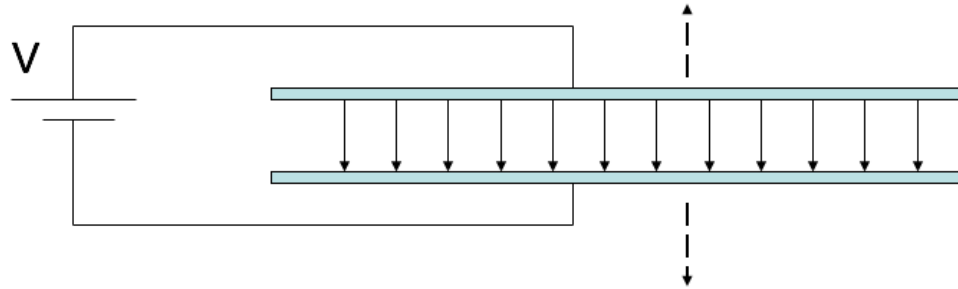
- A. #1 has twice the stored energy
- B. #1 has more than twice
- C. They both have the same
- D. #2 has twice the stored energy
- E. #2 has more than twice.

#1



#2

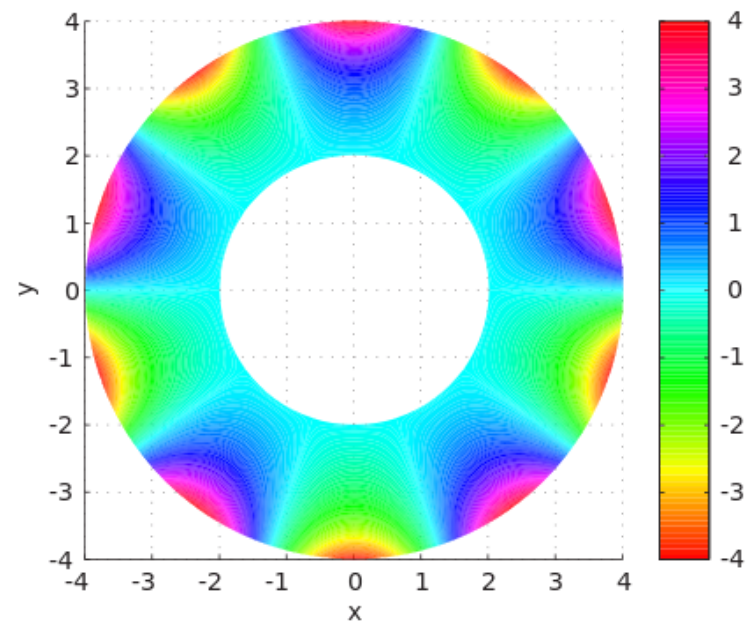
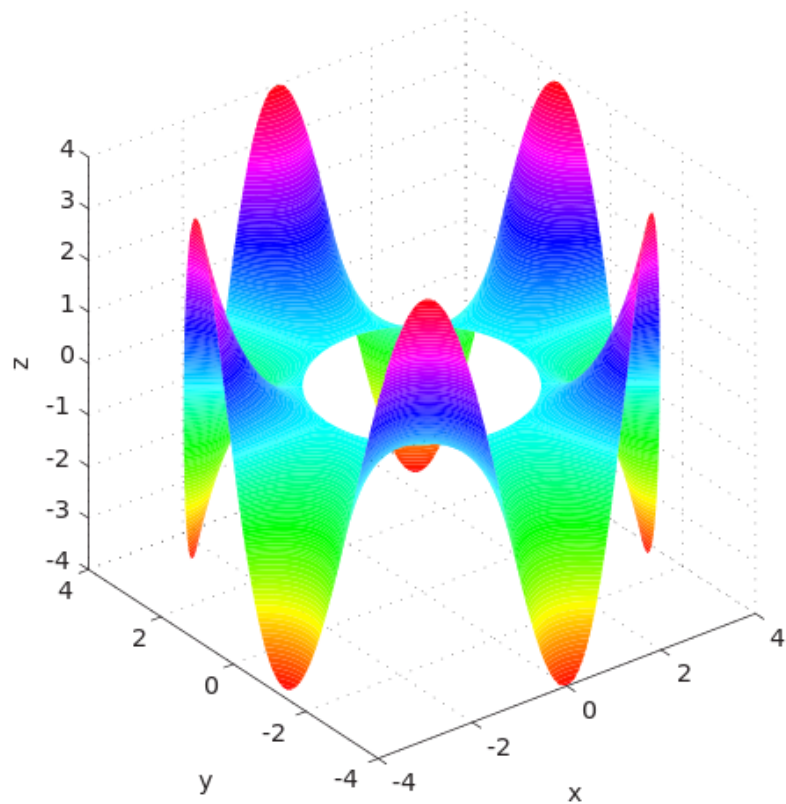




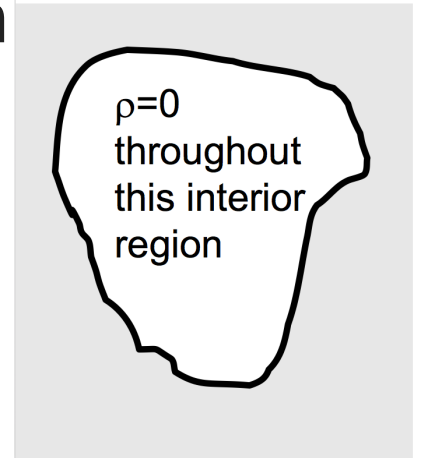
A parallel plate capacitor is attached to a battery which maintains a constant voltage difference V between the capacitor plates. While the battery is attached, the plates are pulled apart. The electrostatic energy stored in the capacitor

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

LAPLACE'S EQUATION

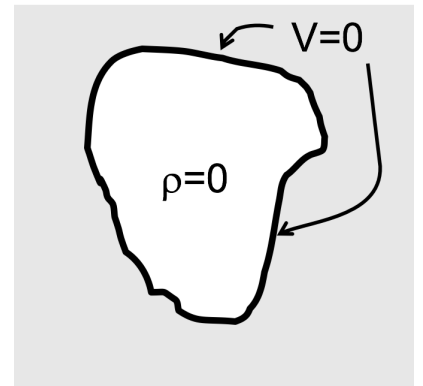


A region of space contains no charges. What can I say about V in the interior?



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