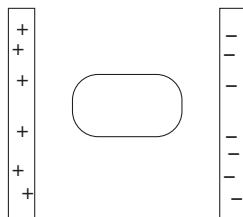


AP Physics 2 Review Questions

Integrating Content, Inquiry and Reasoning

1. An uncharged hollow conductor is placed in between two conducting parallel plates separated by 60 cm. The plates are hooked up to a 12-V power supply with the positive lead on the left-hand plate and the negative (ground) lead on the right-hand plate.

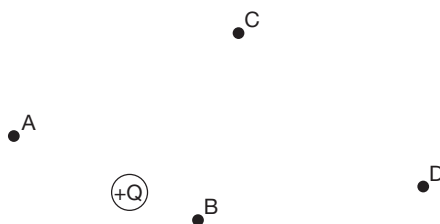


- For the configuration above, draw what the equipotential lines would look like. Draw what the electric field vectors would look like.
- How does the hollow conductor affect the field? What is the field inside the conductor?
- The hollow conductor is removed. What is the value of the electric field between the plates?

2. Draw what the electric field vectors look like in the configuration below.



3. Consider the situation below.



- Rank the points by order of increasing magnitude of the electric field.
- Rank the points by order of increasing magnitude of the potential difference.
- The potential difference between point B and point C is 2 V and they are 4 m apart. What is the average value of the electric field between points B and C?

d. Would the potential difference measured at point D change if a negative charge was placed there? Why or why not?

4. A 0.1 C charge with a mass of 1 kg is accelerating at 9.8 m/s^2 towards a 100 kg fixed 10 C charge.

a. What is the distance between the two charges?

b. What is the acceleration due to gravity between the two charges?

5. Analyze the situation below. The negative $-100 \mu\text{C}$ charge is 16 m from point A. The positive $20 \mu\text{C}$ charges are 12 m apart from each other. They are also equidistant from point A and from the negative charge. What is the direction and magnitude of the electric field vector at point A?

