



## AP<sup>®</sup> Physics C: Electricity & Magnetism 2003 Scoring Commentary

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**AP<sup>®</sup> PHYSICS C: ELECTRICITY AND MAGNETISM  
2003 SCORING COMMENTARY**

**Question 1**

Sample P (Score 15)

In part (a), this student first applies Gauss' law, and then realizes that the sphere can be treated like a point charge.

Sample Q (Score 13)

This response loses 1 point in (c) for the answer, since the negative sign associated with the electron charge is missing, resulting in a negative kinetic energy. Part (e) has some mathematical errors and loses the answer point.

**Question 2**

Sample U (Score 15)

This response is minimalist in the calculations, but the diagrams are very explicitly labeled.

Sample V (Score 12)

This response only gets 1 point for part (b). The student tries to use the given current equation, but the work is incorrect.

**Question 3**

Sample Z (Score 15)

In part (b), this student calculates the potential difference and uses that to find the electric field.

Sample AB (Score 12)

This response indicates the wrong end at higher potential in (d). In (e) ii, there is no indication of where the added wire is, so no credit can be earned there.