PHYS 102: General Physics 2 KOÇ UNIVERSITY Spring Semester 2014

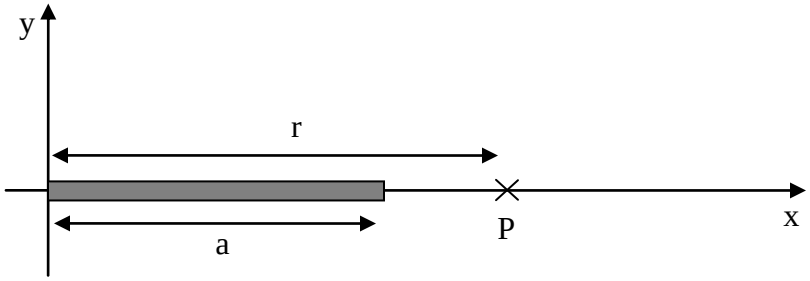
College of Arts and Sciences

Section 1 Quiz 3 27 February 2014

Closed book. No calculators are to be used for this quiz.
Quiz duration: 10 minutes

Name: Student ID: Signature:

Positive charge Q is distributed uniformly along the x-axis from $x=0$ to $x=a$. Calculate the electric potential at the point P located on the positive x-axis at $x=r$, where $r>a$. Consider the electric potential to be zero at infinity.



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Section 2 Quiz 3 27 February 2014

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Quiz duration: 10 minutes

Name: Student ID: Signature:

The potential due to a point charge Q at the origin may be written as:

$$V = \frac{Q}{4\pi\varepsilon_0\sqrt{x^2 + y^2 + z^2}}$$

Calculate the x, y and z components of the electric field (E_x , E_y , E_z).

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Section 3 Quiz 3 27 February 2014

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Quiz duration: 10 minutes

Name: Student ID: Signature:

A homogeneously charged insulating sphere with radius R has a total charge Q. Find out the electric potential both inside ($r<R$) and outside ($r>R$) the sphere considering the electric potential to be 0 at infinity.

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Section 4 Quiz 3 27 February 2014

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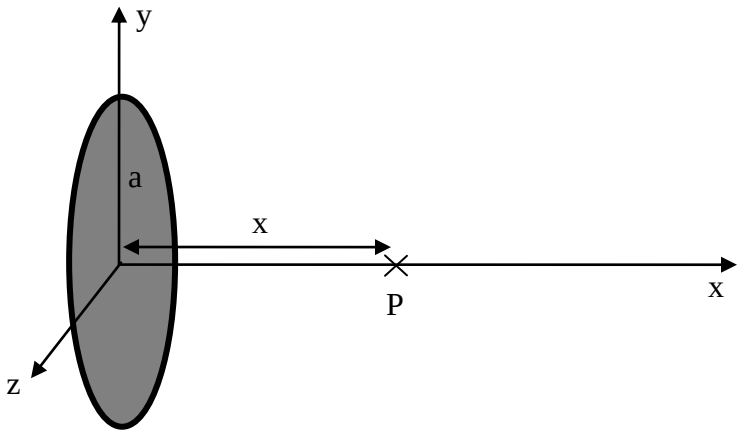
Quiz duration: 10 minutes

Name: **Student ID:** **Signature:**

A disk shaped conductor with radius *a* lies on the y-z plane and carries a total charge *Q* uniformly distributed around it. Find the electric potential at a point *P* that lies on the axis of the disk at a distance *x* from its center.



PHYS 102: General Physics 2 KOÇ UNIVERSITY Spring Semester 2014

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Section 5 Quiz 3 27 February 2014

Closed book. No calculators are to be used for this quiz.
Quiz duration: 10 minutes

Name: **Student ID:** **Signature:**

Consider a long, conducting cylinder with radius a, and charge density λ (units: C/m). Find out the electric potential $V(r)$, outside the cylinder ($r>a$). Take $V=0$ at $r=a$.

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Section 6 Quiz 3 27 February 2014

Closed book. No calculators are to be used for this quiz.
Quiz duration: 10 minutes

Name: Student ID: Signature:

A conducting sphere with radius R has a total charge Q. Find out the electric potential both inside ($r<R$) and outside ($r>R$) the sphere considering the electric potential to be 0 at infinity.