Chapter 16 Practice Problems

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1 Preliminaries

In this chapter we learn about measuring electric potential in the context of point charges and collections of charges. We apply the idea of electric fields as a way to store energy when we talk about capacitors.

2 Problems

2.1 Problem 1

An electron moving at $3.0 \times 10^5 m/s$ is stopped by a conductor. What is the minimum potential difference the conductor must have?

2.2 Problem 2

An electron moving at velocity v, moves along the perpendicular between two charged plates producing an electric field of $2.5 \times 10^4 N/C$. Its final velocity is $3v$ after it has moved 2cm. What are its final velocity, initial velocity, and acceleration?

2.3 Problem 3

Two point charges are located in the Cartesian plane. A 9nC charge lies at (0,0) and a 3nC charge lies at (3,4). What is the electric potential at (5,1)?