## Intro:

We move on Chapter 3 and ways of finding the scalar potential (Laplace's equation and image charges), conductors - material in which charge is free to move - and capacitors.

## **Reading:**

• Chapter 3 sections 1 - 5

## A look ahead:

• Simple circuits and Ohm's "law" in Chapter 4 of PM

## Problems: Due Friday February 9 at the start of class

- (1) 2.3 Equipotentials
- (2) F.1 (which is in appendix F)
- (3) Find the electric field and potential of a long straight cylinder or radius R with charge density  $\rho = br^2$ , where b is a positiver constant with units C/m<sup>5</sup>.
- (4) 2.18
- (5) (OPTIONAL for 1 extra point) 2.65
- (6) 2.31
- (7) 2.39
- (8) Calculate the divergence of the vector fields  $\vec{F}, \vec{G}$ , and  $\vec{H}$  in problem 2.75.
- (9) 3.1 In a conductor the electric field vanishes...