

## Preparation Assignments

### Due Wednesday, February 20

The Electric field for a cylindrical coordinate system is:

$$E_r = E_0 r^2 \hat{r} \quad \text{for } a < r < b$$

$$E_r = \frac{E_0 b^3}{r} \hat{r} \quad \text{for } b < r < c$$

What is the potential difference between  $r = a$  and  $r = c$ ?

### Due Thursday, February 21

For the same field distribution above, the potential difference is 10V. Conducting surfaces are placed at  $r = a$  and  $r = c$ . What are the charge distributions on those surfaces?