$$\nabla^2 V^{\text{stat}} = -\frac{\rho'_{\text{e,vol}}}{\varepsilon_0}$$

$$\vec{E}^{\text{ir,stat}} = \iiint_{V'} \frac{\rho'_{\text{e,vol}}}{4\pi\varepsilon_0} \frac{\vec{r}-\vec{r'}}{\left\|\vec{r}-\vec{r'}\right\|^3} dv'$$

$$\nabla \frac{1}{|\mathbf{r}|} = -\frac{\mathbf{r}}{|\mathbf{r}|^3}$$

$$\nabla^2 \left(\frac{1}{|\mathbf{r}|}\right) = -4\pi\delta(\mathbf{r})$$

$$\nabla \cdot \vec{D}^{\text{ir,stat}} = \rho'_{\text{e,vol}}$$

$$\nabla \times \vec{E}^{\text{ir,stat}} = \vec{0}$$

$$\vec{E}^{\text{ir,stat}} = -\nabla V^{\text{stat}}$$

$$V_{AB}^{\text{stat}} = V_A^{\text{stat}} - V_B^{\text{stat}} = -\int_B^A \vec{E}^{\text{ir,stat}} \cdot \vec{dl}$$

$$W_E^{\text{stat}} = \frac{1}{2} \iiint_V \rho_{\text{e,vol}} V^{\text{stat}} dv = \frac{1}{2} \iiint_V \varepsilon_0 \left\|\vec{E}^{\text{ir,stat}}\right\|^2 dv$$

$$dW_E^{\text{stat}} = \frac{1}{2} \rho_{\text{e,vol}} V^{\text{stat}} dv = \frac{1}{2} \varepsilon_0 \left\|\vec{E}^{\text{ir,stat}}\right\|^2 dv$$