$$\phi(\mathbf{x}) = \frac{1}{4\pi\varepsilon_0} \iiint\limits_{\mathbb{R}^3} \frac{\rho(\mathbf{x}')}{|\mathbf{x}-\mathbf{x}'|}\, dV'$$

$$\mathbf{A}(\mathbf{x}) = \frac{\mu_0}{4\pi} \iiint\limits_{\mathbb{R}^3} \frac{\mathbf{J}(\mathbf{x}')}{|\mathbf{x}-\mathbf{x}'|}\, dV',$$