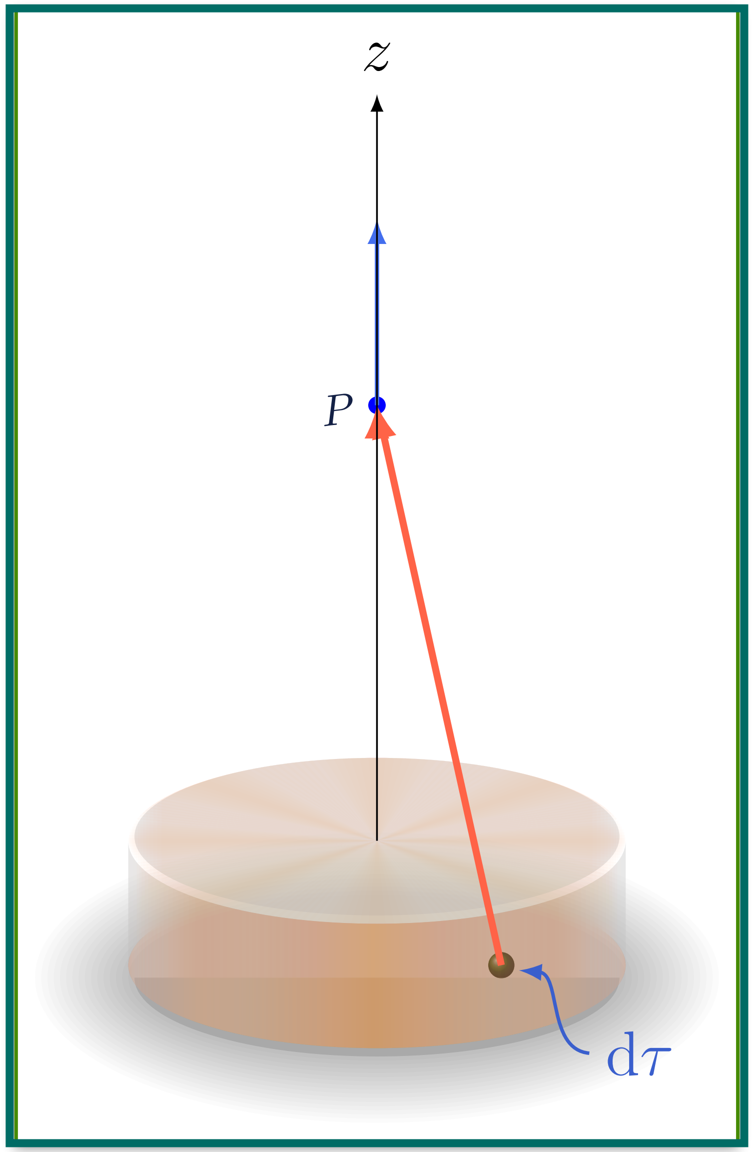
Eletromagnetismo

16 de abril
Eletrostática

Potencial de distribuição de cargas

$$V(\vec{\mathbf{r}}) = \frac{1}{4\pi\epsilon_0}\int_{\mathcal{V}} \frac{\rho(\vec{\mathbf{r}}')}{\mathscr{r}}\,\mathrm{d}\tau'$$



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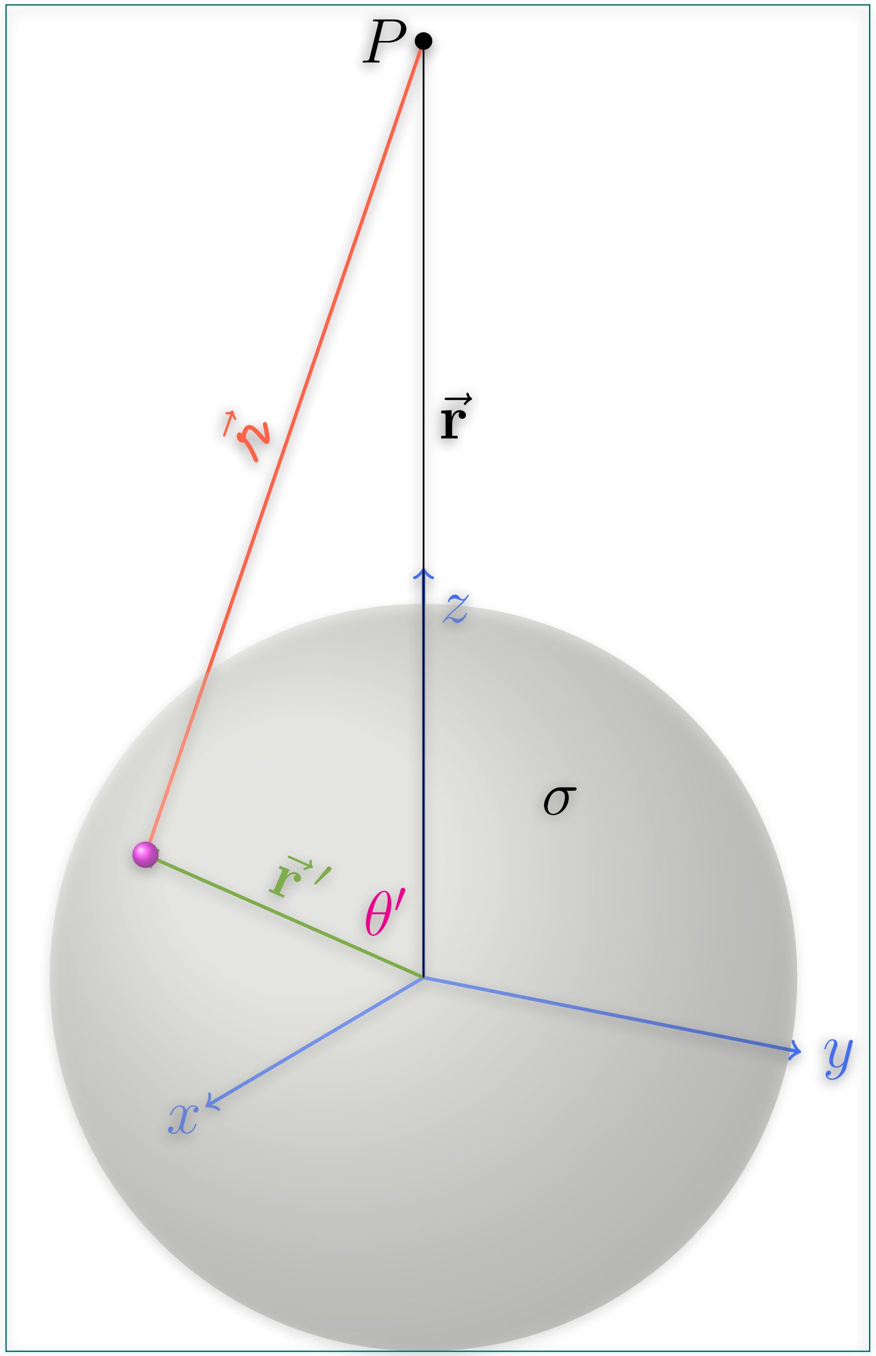
Pratique o que aprendeu

$$V(\vec{r}) = ?$$



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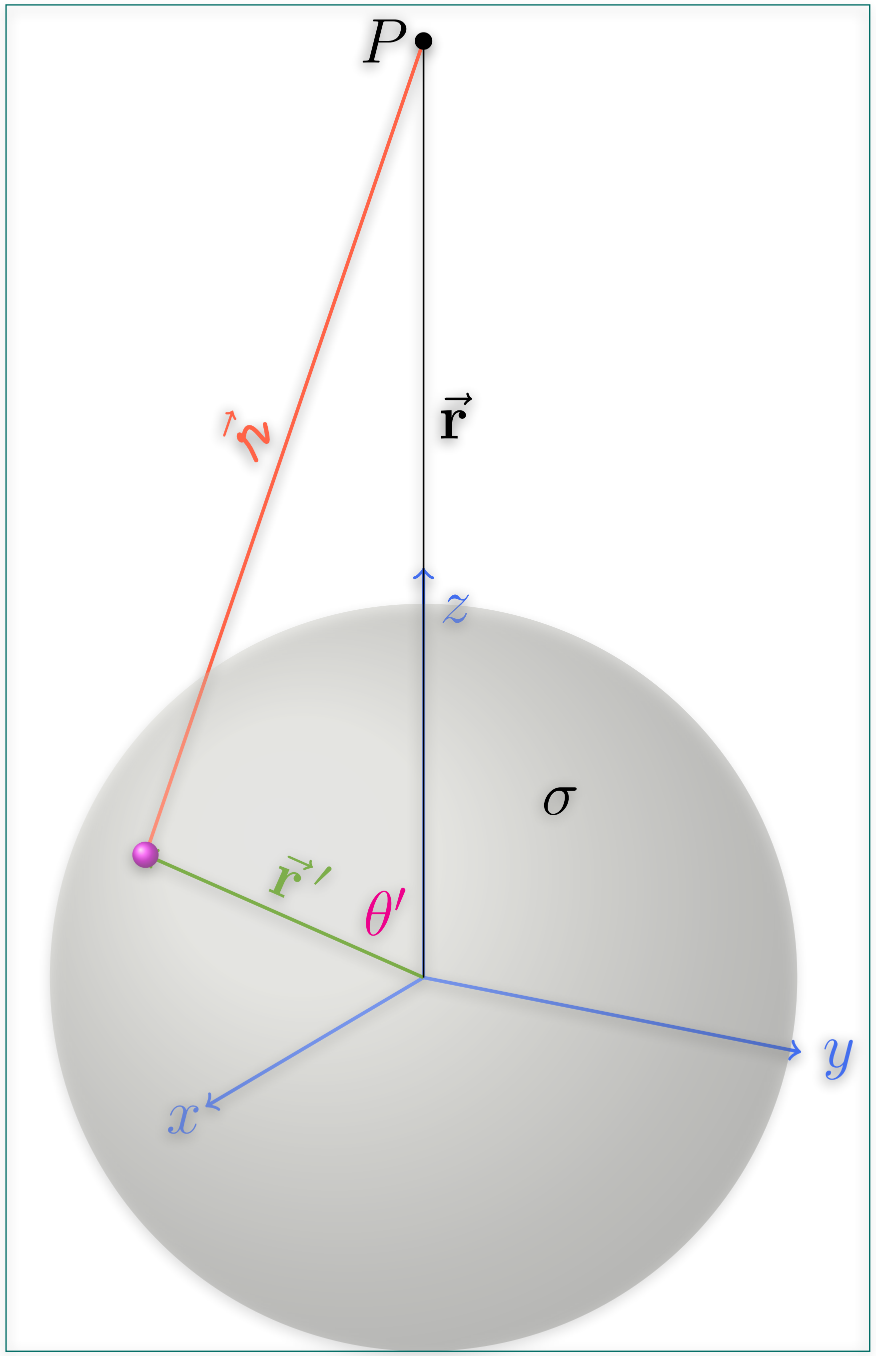
Pratique o que aprendeu

$$\mathscr{r} = \left(r'^2 + r^2 - 2rr'\cos(\theta')\right)^{1/2}$$



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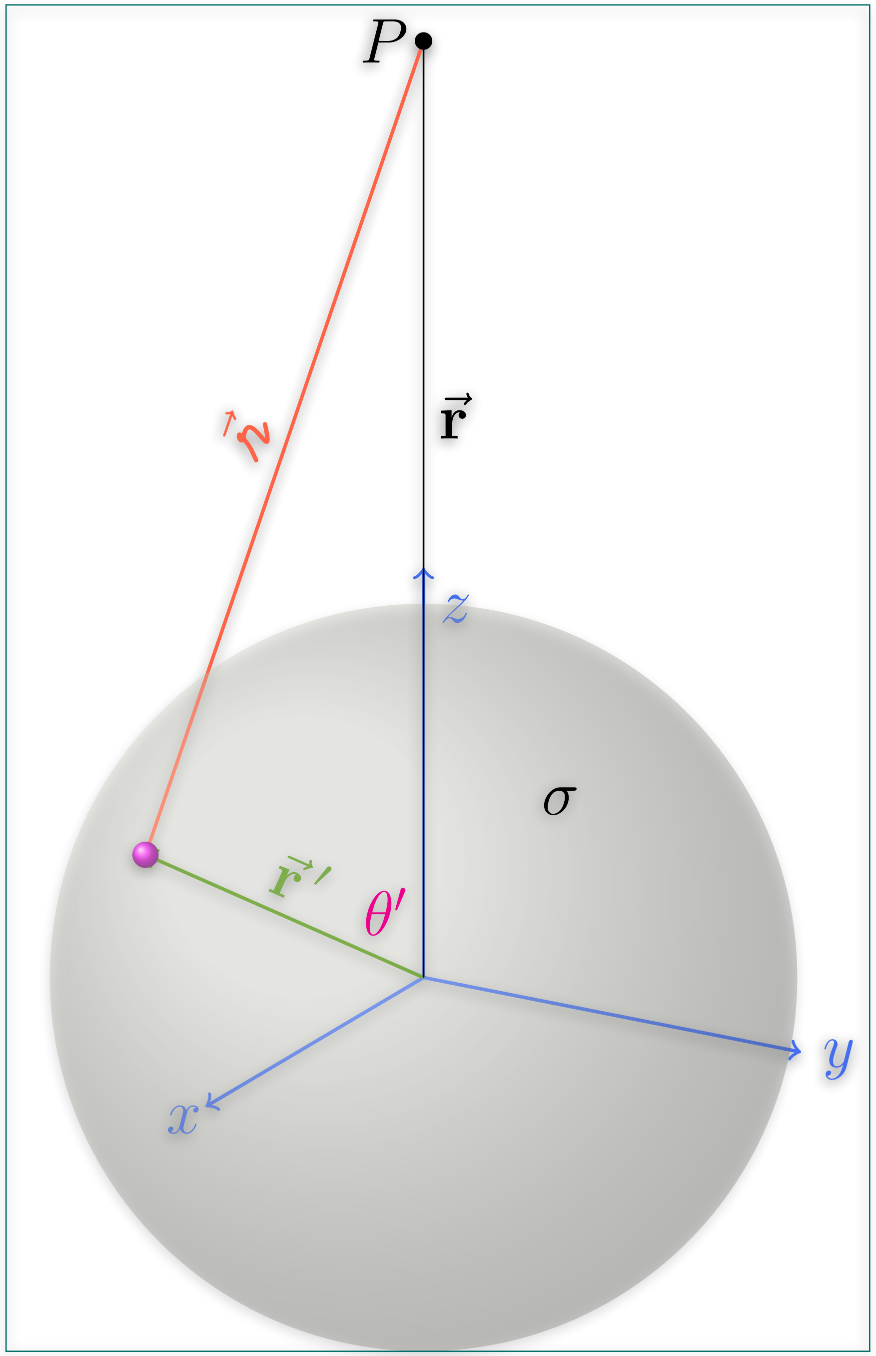

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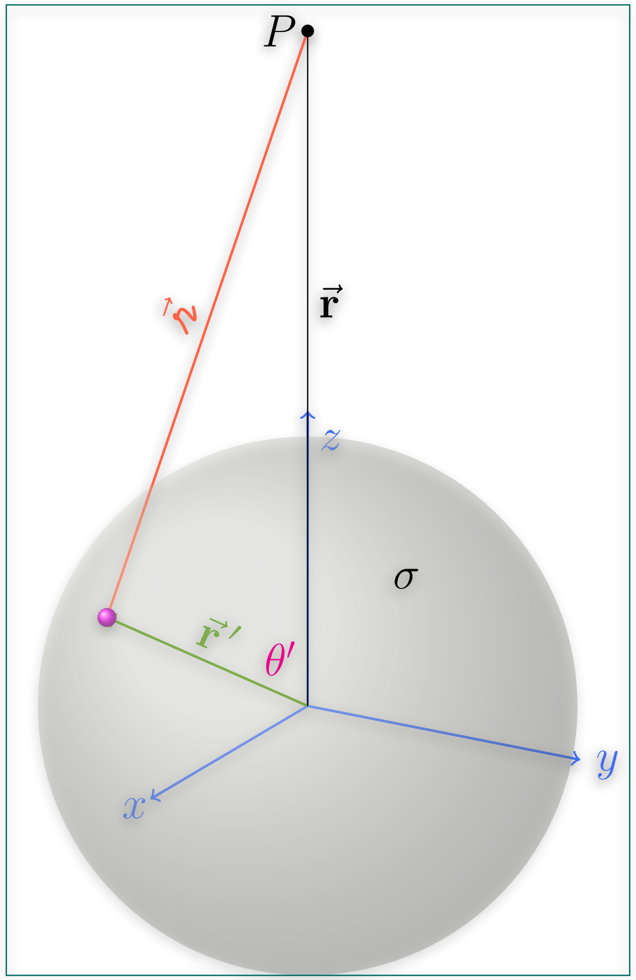

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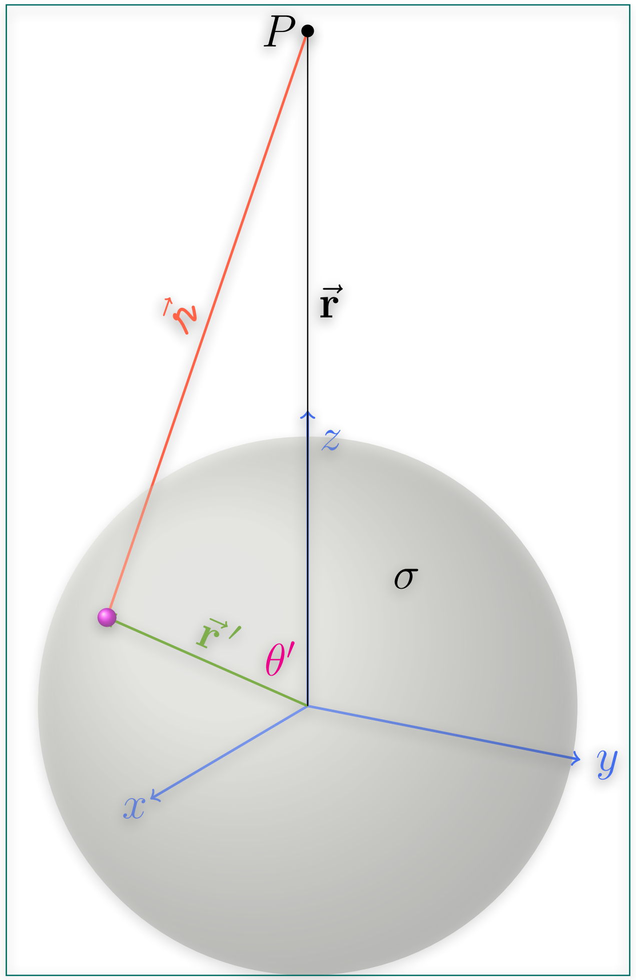

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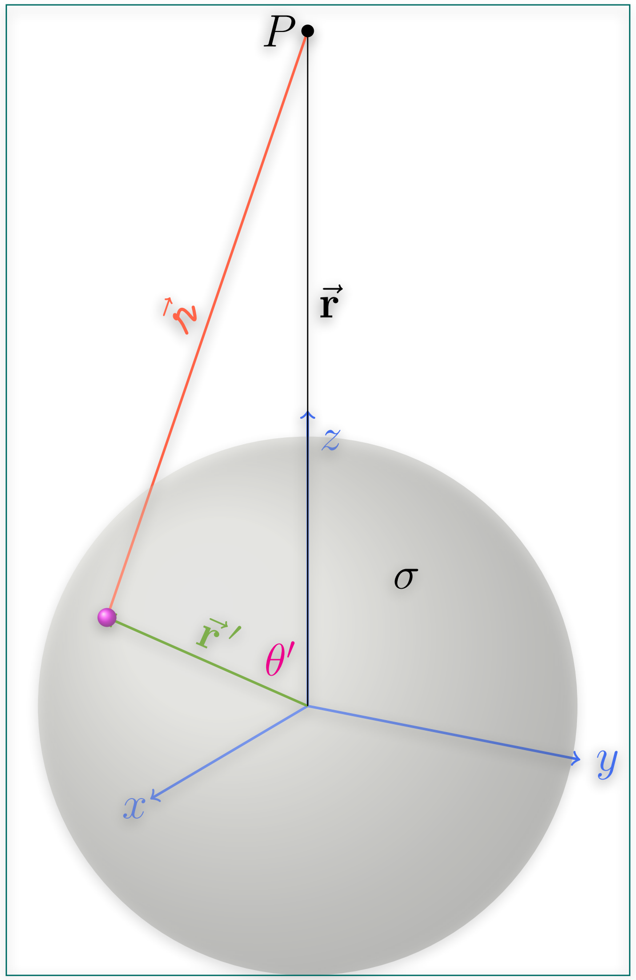

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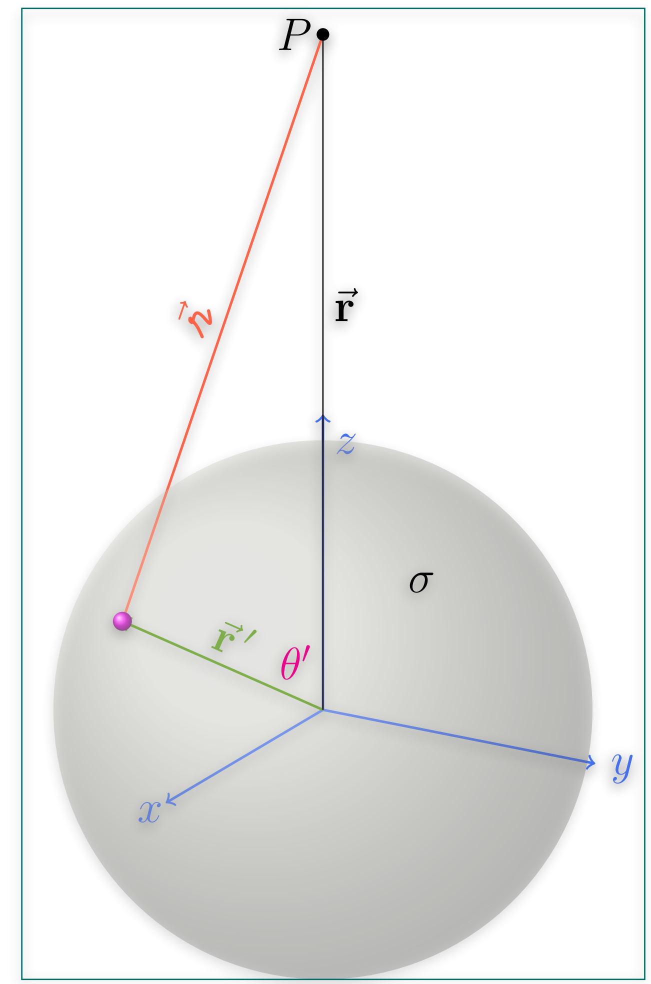

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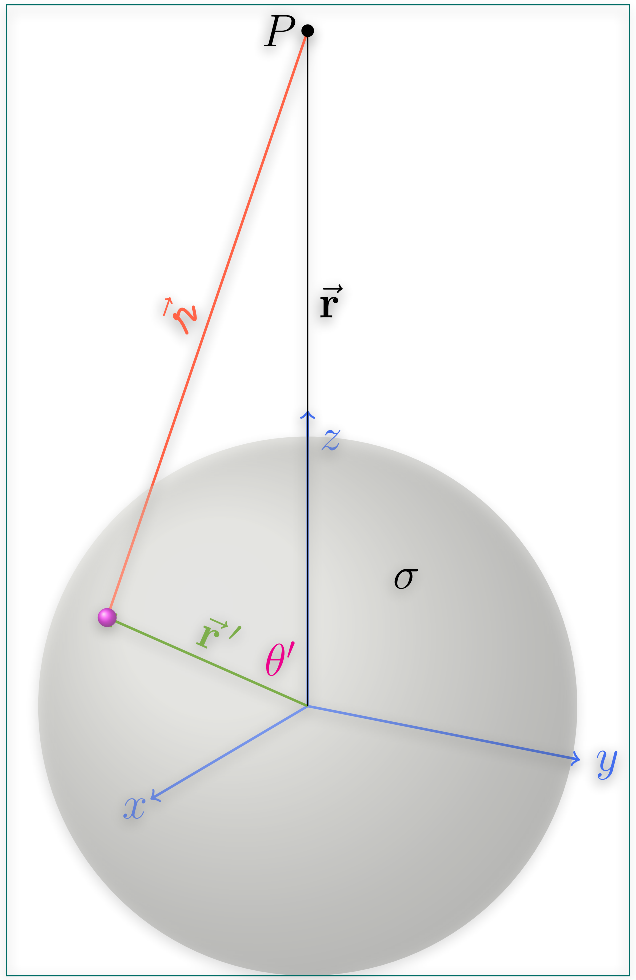

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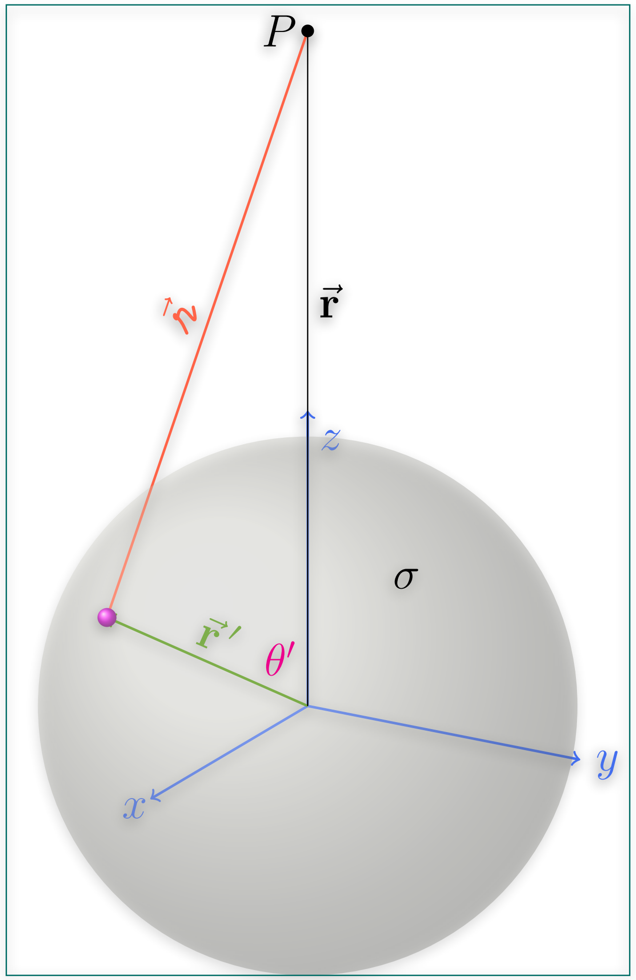

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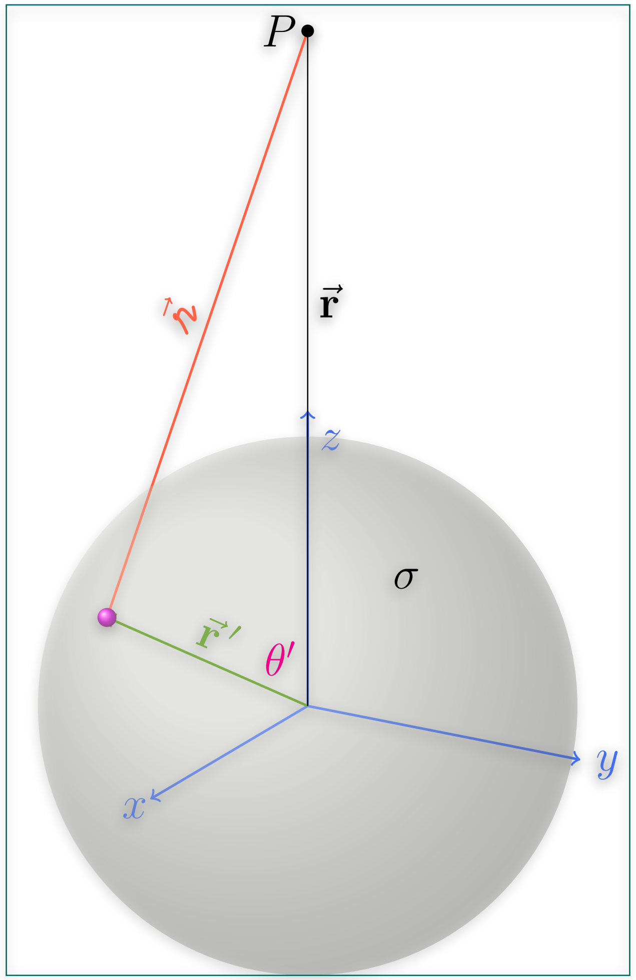

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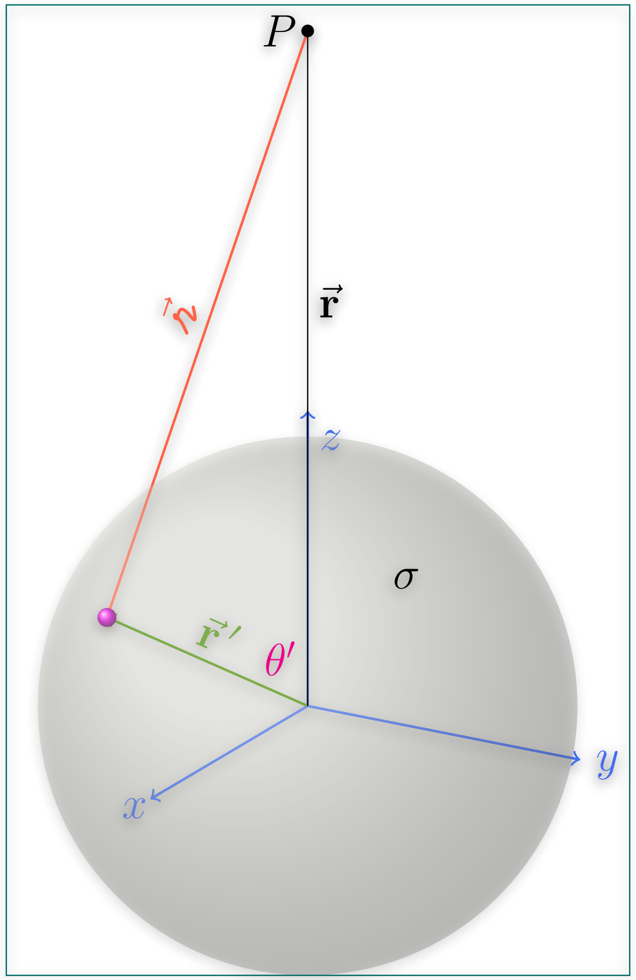
$$\vec{\mathbf{E}} = -\vec{\boldsymbol{\nabla}} V \quad ?$$



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$$\vec{\mathbf{E}}(\vec{\mathbf{r}}) = \begin{cases} \dfrac{\sigma R^2}{\epsilon_0}\dfrac{\hat{\mathbf{r}}}{r^2} & (r \geq R) \\ 0 & (r \leq R) \end{cases}$$