

potential $\overset{x:y:z}{V} = \sqrt{x^2 + y^2 + z^2}^{-1/2}$

force $\begin{cases} \partial_x V = -\frac{1}{2} \sqrt{x^2 + y^2 + z^2}^{-3/2} 2x = -\frac{x}{\sqrt{x^2 + y^2 + z^2}^{3/2}} \\ \partial_y V = -\frac{1}{2} \sqrt{x^2 + y^2 + z^2}^{-3/2} 2y = -\frac{y}{\sqrt{x^2 + y^2 + z^2}^{3/2}} \\ \partial_z V = -\frac{1}{2} \sqrt{x^2 + y^2 + z^2}^{-3/2} 2z = -\frac{z}{\sqrt{x^2 + y^2 + z^2}^{3/2}} \end{cases}$

$\overset{x:y:z}{\nabla V} = -\frac{x:y:z}{\sqrt{x^2 + y^2 + z^2}^{3/2}}$