

Section 6.8. In #12 and #15, note that the potential ϕ satisfies $\mathbf{F} = -\nabla\phi$ with a minus sign. In #20, the calculations for the first \mathbf{F} are simple, but the calculations for the second \mathbf{F} can get messy. Feel free to use another coordinate system, if you wish. To calculate ϕ , for example, I suggest spherical coordinates (see formula (6.8) on page 294).