PHY2049 Summer 2018
Lecture 5 Review Questions

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Chapter 25: Electrostatic Potential and Energy

Review the following problems (challenge problems given by *):

- **Section 25.1**: 5, 7, 13
- **Section 25.2**: 21, 27
- **Section 25.4**: 42†, 46†
- **Section 25.5**: 63, 65††, 69*
- **Review Problems**: 81, 83

† There are no good odd-numbered problems, so I'll just give you the answers. For problem 42,

$$\vec{E}(2,2) = (8\text{ N/C})\hat{i} + (4\text{ N/C})\hat{j}$$

For problem 46,

$$\vec{E}(x,y,z) = (2xy + 3yz)\hat{i} + (x^2 + 3xz + 2zy)\hat{j} + (3xy + y^2)\hat{k}$$

†† You should find the answer in Joules (J) like you normally would, and then use an online converter like WolframAlpha to find the answer in eV; for example, if you wanted to know 2.4×10^{-5} J in eV, you could type "Convert 2.4e-5 J to eV" and WolframAlpha will output 1.498×10^{14} eV.