Skills check (not to turn in):
§16.9: 14

Assigned:

1. Suppose $\nabla \cdot \vec{F} = xyz^2$.
   (a) Find $\nabla \cdot \vec{F}$ at the point $(1, 2, 1)$.
   Note: You are given $\nabla \cdot \vec{F}$, not $\vec{F}$!
   (b) Using your answer to part (a), but no other information about the vector field $\vec{F}$, estimate the flux out of a small box of side 0.2 centered at the point $(1, 2, 1)$ and with edges parallel to the axes.
   (c) Without computing the vector field $\vec{F}$, calculate the exact flux out of the box.

2. §16.9: 22
   Suggestion: Use the standard rectangular basis vectors $\hat{i}, \hat{j}, \hat{k}$. 