First, Section 14.5 #1, 11, 17, 19, 40, 45.

Second, the two Spacecraft problems from the `chainRule.pdf` handout. Feel free to use the gradient in both of these problems, if you like. (Doing the Company problems in that handout is also a good idea, but I am not asking you to hand in your solutions to the Company problems.)

Finally, Section 14.6 #5, 17, keeping in mind the note below.

In this course, our convention for directional derivatives is that the direction vector $\vec{v}$ is not required to be a unit vector. For example, in problem 17 above, $\vec{v}$ has length 3. The book expects you to scale it down to length 1 and then compute the directional derivative. Please do not scale it down. You will end up with an answer that is 3 times the book's answer. That is what I want.

(There is a mathematical reason for requiring $\vec{v}$ to be unit — namely, so that we can focus on the direction of $\vec{v}$ without muddying the answer with the magnitude of $\vec{v}$. But there are other, even more compelling reasons not to make this requirement.)