Problem Set for Week 7

The work handed in should be entirely your own. You can consult Stewart and/or the class notes but nothing else. To receive full credit, justify your answer in a clear and logical way. Due March 4.

Reading. This is the most important part of the homework: Read Sections 16.2-16.3 of the textbook carefully.

1. Section 16.2 Exercises 2, 6, 10, 14, 20, 22.
2. Section 16.3 Exercises 4, 6, 14, 20, 30.
3. Evaluate the integral $\int_C \mathbf{F} \cdot d\mathbf{r}$. Here $\mathbf{F}$ is the field

$$\mathbf{F}(x, y) = (x^2, e^{sin^4(y)}),$$

and the curve C goes from $(-1, 1)$ to $(1, 1)$ along the parabola $y = x^2$.