18.02 HOMEWORK #10, DUE THURSDAY NOVEMBER 15TH

PART A (4 POINTS)

(11/08) Notes V5; 12.8 to page 841; Notes I.3; 14.6 (especially Examples 1, 2, 3); 14.7
pages 988-989.
4G/1, 5, 6.
12.8/5, 23.
14.6/41.
14.7/9, 19.
5A/1, 2a$\underline{b}$c$\underline{d}$, 3, $\underline{4}$, $\underline{5}$, 6, 7.
(11/09) Review
(11/13) 3rd Midterm

PART B (11 POINTS)

1. (Thursday 3 points) Say whether the following statement is TRUE or FALSE.
If R_1 and R_2 are simply conected regions then so is their union $R_1 \cup R_2$.
If it is true, explain why; if false give an example to show that it is definitely false.
2. (Thursday 4 points) Find the flux of the vector field

$$\vec{F} = \frac{x}{r^2}\hat{i} + \frac{y}{r^2}\hat{j}.$$

outwards for any circle centred at $(1,0)$ of radius $a \neq 1$. Consider the case $a < 1$ and
$a > 1$ separately. Explain your answers with diagrams.
3. (Thursday 4 points) 14.6/39.

PART C: 0 POINTS