HOMEWORK 24
CALCULUS III
DUE 04-29

(1) In class, we showed that

$$\int_C (2x - 3y + 1)\mathrm{d}x + (3x + y - 5)\mathrm{d}y = -30,$$

where C is the curve in #15.3.16. Let R be the triangle bounded by C.

(a) Find the area of R by computing the base and height of the triangle bounded by C. Show your work.

(b) Find the area of R by setting up and computing a double integral. Is your answer the same as (a)?

(c) According to what we did in class, Green's theorem says that the line integral should be equal to $6\,\mathrm{area}(R)$, but that's not what happens. Explain why not.

- **Twelve** book problems: #15.3.6, 7, 12, 28, 29, 46; #15.4.2, 3, 7, 8, 16, 17.