

## MATH 224

*Some Hints and Answers for Assignment 31*  
Exercises 15, 17, 20, 21ac, and 26 of Chapter 8.

**15:**  $f(x, y) = ye^x$ .

**17:**  $G_x \neq F_y$  One of them is  $12xe^{2x^2+3y}$ .

**20:** Check whether  $f_{xz} = f_{zx}$ .

**21a:**  $-12\pi$ .

**21c** -1.

**23:** Use Green's Theorem.

**26:** Gauss's Theorem in the plane

$$\int_{\gamma} \nabla f \cdot \mathbf{n} = \int_{\gamma} \operatorname{div} \mathbf{F}$$

will be helpful.