

MATH 3851 Homework Assignment 4 (due at the BEGINNING of  
class Tuesday, February 6th)

Textbook problems:

Section 24 (pages 70-72): 2(b), 3(c), 4(b)

Section 26 (pages 76-77): 1(c), 6

Section 30 (pages 89-90): 6

Extra problems:

- For the function  $u(x, y) = \frac{y}{x^2+y^2}$ , find a domain  $D$  in which  $u$  is harmonic, and find a real-valued function  $v(x, y)$  so that  $f = u + iv$  is analytic in  $D$ .
- Where is the function  $\cos(xy)$  differentiable? Where is it analytic?