

Math 421

Problem Set 1

Fall, 2006

Due: Friday, Sept. 15

1. (a) Do page 6, Exercise 5 (b).  
(b) Do page 6, Exercise 6 (a).
2. Do page 14, Exercise 2 (e) and (j).
3. Use the *definition* of complex numbers as ordered pairs and the *definitions* of addition and multiplication in  $\mathbb{C}$  in terms of ordered pairs to establish the distributive law (for multiplication over addition).
4. Do page 14, Exercise 6 (a) and (d).
5. Prove identity (1–26) from page 19. Try to do this *without* using the  $x + iy$  form for complex numbers!