

HOMEWORK 1  
Math 104 - Dr. Evans  
UCSD Winter 2004  
Due Thursday, January 8, 5:00pm

1. Show that 2 and 3 are primes in  $\mathbb{Z}[\sqrt{-5}]$ .

Hint: Suppose that  $2 = (a + b\sqrt{-5})(c + d\sqrt{-5})$  where  $a, b, c, d$  are integers. Multiply by the conjugate on both sides and break into three cases. Conclude that one of the two numbers must be  $\pm 1$ . Do the same thing for 3.