QUIZ 1 - MATH 313:COMPLEX ANALYSIS - Fall 2013

Do as many of the problems you can now, turn it in. I will mail you the quiz after class in case you did not have time to finish, or you would like a second chance on any of the turned in problems, bring your solutions on Thursday 8/22/2013.

1. Check that $(\sqrt{2} - i) - i(1 - \sqrt{2}i) = -2i$.
2. Find a and b real numbers so that
$$\frac{4+i}{2-3i} = a + ib.$$
3. Let $z = -1 + i$.
   (a) Find the modulus of z, $|z|$, and the complex conjugate of z, $\bar{z}$. Plot z and $\bar{z}$ in the complex plane.
   (b) Write z in polar coordinates, $z = re^{i\theta}$. Find the set $\arg z$.
   (c) Find the complex number $(-1 + i)^7$.
   (d) Find the three cubic roots of z, namely all solutions to the equation $w^3 = -1 + i$.