

**Dr. Z.'s Intro to Complex Variables Homework assignment 2**

**1.** State and prove the triangle inequality.

**2.** Find all the roots of the equations

(a)  $z^3 = 1$  ,   (b)  $z^5 = -32$  ,   (c)  $z^2 = 1 + i$

**3.** What is the center and radius of the circle described by

$$|z - 1| = 2|z - 2| \quad .$$

**4.** Show that if  $\rho$  is a positive real number, and  $c_1, c_2$  are complex numbers, the equation

$$|z - c_1| = \rho |z - c_2| \quad ,$$

describes a circle.