I.5.2. Prove that if z_1 and z_2 are complex numbers, then $|z_1 - z_1| \geq ||z_1| - |z_2||$. Determine the condition for equality.

I.7.4. Prove that the distinct complex numbers z_1, z_2, z_3 are the vertices of an equilateral tiangle if and only if

$$z_1^2 + z_2^2 + z_3^2 = z_1 z_2 + z_2 z_3 + z_3 z_1.$$

I.11.1. Find all cube roots of i.

I.11.4. Prove that the sum of the n-th roots of 1 equals 0 ($n > 1$).

I.14.1. Establish the formula

$$\rho(z, \infty) = \frac{2}{\sqrt{|z|^2 + 1}}.$$

Here $\rho(z, \infty)$ is the Euclidean distance between the image of the point z of the complex plane under the stereographic projection and the North pole of the sphere (representing the infinity ∞).