

MA 503 Homework 8

Due Fri. Nov. 9.

1. Prove that $2 \cos(2\pi/7)$ is a root of the polynomial $X^3 + X^2 - 2X - 1$; and deduce that a regular 7-sided polygon cannot be constructed with straightedge and compass.

Do the following problems in Clark:

2. 107 β .

3. 107 γ .

4. 107 δ .

5. 107 ϵ .

EXTRA CREDIT:

6. Prove that the construction of a regular pentagon illustrated on the cover of Clark works.