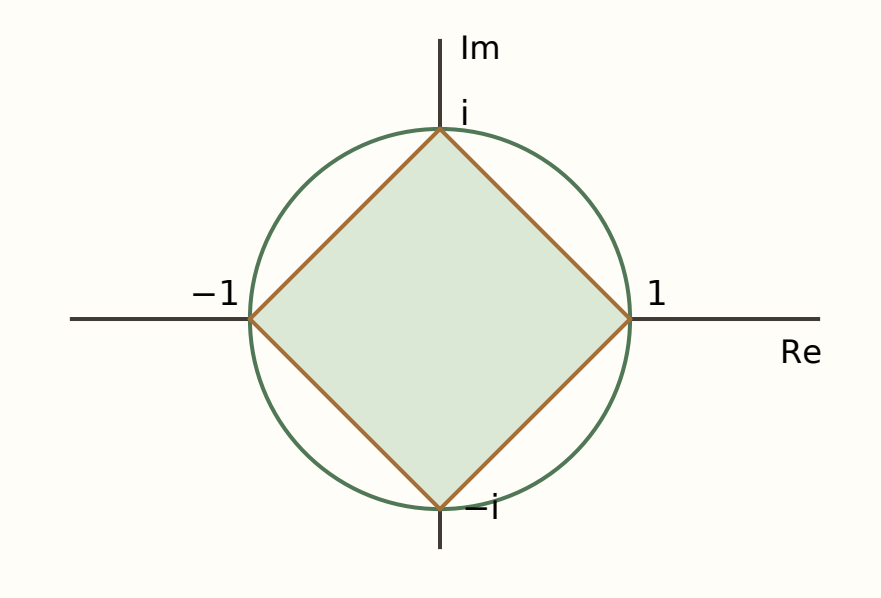
Roots of unity

Name: _____ Date: _____

6 questions | 14 marks

1. List all fourth roots of unity in Cartesian form. [2 marks]



2. Let $\omega = \text{cis}(2\pi/3)$. Simplify ω^{11}. [2 marks]

3. For $\omega = \text{cis}(2\pi/3)$, show that $\overline{\omega} = \omega^2$. [2 marks]

4. Find the product of all fourth roots of unity. [2 marks]

5. Show that the sum of the five fifth roots of unity is zero. [3 marks]

6. A regular hexagon has vertices at the sixth roots of unity. Find its perimeter. [3 marks]