MATH 120A Prep: Complex Numbers I

1. Convert i and 1 to polar form and show that $i^4 = 1$.

2. Write $-2 + 2i$ and $1 + \sqrt{3}i$ in polar form and multiply.

3. What is $\dfrac{1}{re^{i\theta}}$ in polar form? [Hint: If $(re^{i\theta})(se^{i\phi}) = 1$ what do we need s and ϕ to be?]