Please PRINT your name _____

No calculators, cell phones, computers, notes, etc.

Make your work correct, complete and coherent.

Please take a picture of your quiz (for your records) just before you turn the quiz in. I will e-mail your grade and my comments to you. I will keep your quiz.

The quiz is worth 5 points. The solutions will be posted on my website later today.

Quiz 4, February 22, 2023

What are the left cosets of the unit circle group

$$U = \{e^{i\theta} = \cos\theta + i\sin\theta \mid \theta \in \mathbb{R}\}$$

in $(\mathbb{C} \setminus \{0\}, \times)$? Answer this question with a picture!

Answer: If $z \in \mathbb{C} \setminus \{0\}$, then $z = r(\cos\theta + i\sin\theta) \in rU$ for some positive real number r. The cosets rU as r roams over the set of positive real numbers partition $\mathbb{C} \setminus \{0\}$ into distinct cosets.

The cosets of U in $\mathbb{C} \setminus \{0\}$: