

Worksheet §1

Due: Thursday, August 28

Remember, where appropriate, explain how you got your answers! No calculators are allowed or needed.

1. Solve for z .

(a) $\frac{z}{1+i} - 3i = 2 - i$

(b) $z^2 - (2+i)z - 1 + i = 0$

2. Compute the following.

(a) i^{2025}

(b) $(1+i)^{10}$

3. Recall that $|z|$ denotes the length of z when viewed as a vector.

(a) Graph $|z| = 1$.

(b) Given w and z in \mathbb{C} , explain what $|w - z|$ means geometrically.

(c) Graph $|z - i| = 2$.

4. Suppose $\sin 3\theta = 1$. What are the possible values for θ ? You may assume that $0 \leq \theta < 2\pi$.