

Sketch in the complex plane the following subsets of C , the set of complex numbers.

1. $\left\{ z : \text{Arg}(z+1-i) < \frac{2\pi}{3} \right\}$

2. $\{ z : |z| \geq |z+2-i| \}$

3. $\left\{ z : \frac{\text{Im}(z-1)}{\text{Re}(z-1)} = \frac{1}{2} \right\}$

4. $\{ z : |z+i| + |z| = 2 \}$

5. $\{ z : |z+i| - |z| = 2 \}$

6. $\{ z : |\text{Re}(z-1)| = |z+1| \}$

7. $\{ z : |\text{Re}(z-1)| > |z+1| \}$

8. $\{ z : |\text{Re}(z-1)| = 2|z+1| \}$

9. $\{ z : 2|\text{Re}(z-1)| = |z+1| \}$

10. $\{ z : 2|z| = \arg z \}$

11. $\left\{ z : \frac{\pi}{3} < \text{Arg} z \leq \frac{2\pi}{3} \right\} \cap \{ z : 1 \leq |z-i| < 2 \}$

12. $\{ z : |\text{Im}(z+2)| = |z| \} \cup \{ z : |z+i| \leq 1 \}$