MATH 365 **Name:**

In class work 3, Spring 2023

1. Show that 1 is an interior point of the disk $\mathrm{D}[0,2]$. (MS)
2. Show that 1 is a boundary point of the circle $\mathrm{D}[0,2]$ (CR)
3. Show that 1 is an interior point of $\{z \in \mathbf{C} | \operatorname{Re}(z) > 0\}$. (AK)
4. In the complex plane, sketch a graph of $\operatorname{Re}(z-1) < 2$. (DJ)
5. In the complex plane, sketch a graph of $|z-1| = |z+1|$. **Hint** think geometrically, not algebraically. You need all complex numbers z whose distance to 1 is the same as the distance to -1. (AA)
6. In the complex plane, sketch a graph of $|z-i| = |z-1|$. **Hint** think geometrically, not algebraically. You need all complex numbers z whose distance to 1 is the same as the distance to i. (SB)