Problem 1 (20 Points) For each root locus problem apart from plotting the curves, compute the center of the asymptotes, the asymptote angles, and the breakaway points if any.

1. Draw the root locus of $1/(s(s+1))$.

2. Draw the root locus of $1/(s(s^2 + 5s + 6))$.

3. Draw the root locus of $(s+3)/(s^2 - s - 2)$.

4. Draw the root locus of $(s+1)/(s^3 + 4s^2 + 6s + 4)$. Note that the poles are -2 and $-1 \pm j$.