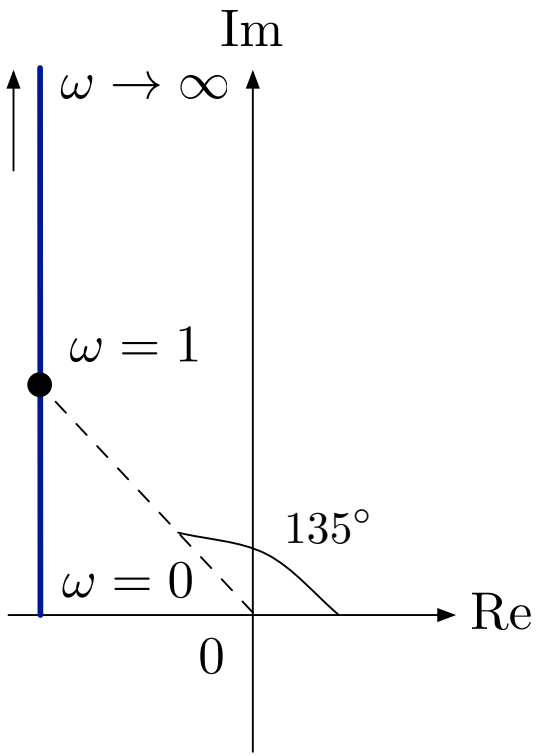
Phase Plot for G_2

$$G_2(j\omega) = \frac{j\omega - 1}{j\omega + 5} = \frac{1}{5}\frac{j\omega - 1}{\frac{j\omega}{5} + 1}$$

Let's do a Nyqiust plot for $j\omega - 1$:



New type of behavior —

- $\omega \approx 0$: $\phi \approx 180°$ (real and negative)
- $\omega \gg 1$: $\phi \approx 90°$ ($\text{Re} = -1$, $\text{Im} = \omega \gg 1$)
- $\omega \approx 1$: $\phi \approx 135°$

For a RHP zero, the phase starts out at 180° and goes down by 90° through the break-point (135° at break-point).