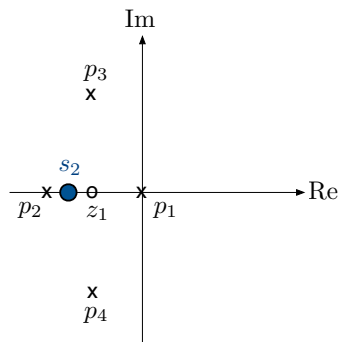


Rule D: Real Locus

Try more test points:



$$\angle(s_2 - z_1) = 180^\circ \quad (s_2 < z_2)$$

$$\angle(s_2 - p_1) = 180^\circ \quad (s_2 < p_1)$$

$$\angle(s_2 - p_2) = 0^\circ \quad (s_2 > p_2)$$

$$\angle(s_2 - p_3) = -\angle(s_1 - p_4)$$

(conjugate poles cancel)

$$\begin{aligned} \angle(s_2 - z_1) - [\angle(s_2 - p_1) + \angle(s_2 - p_2) + \angle(s_2 - p_3) + \angle(s_2 - p_4)] \\ = 180^\circ - [180^\circ + 0^\circ + 0^\circ] = 0^\circ \quad \times s_1 \text{ is not on RL} \end{aligned}$$