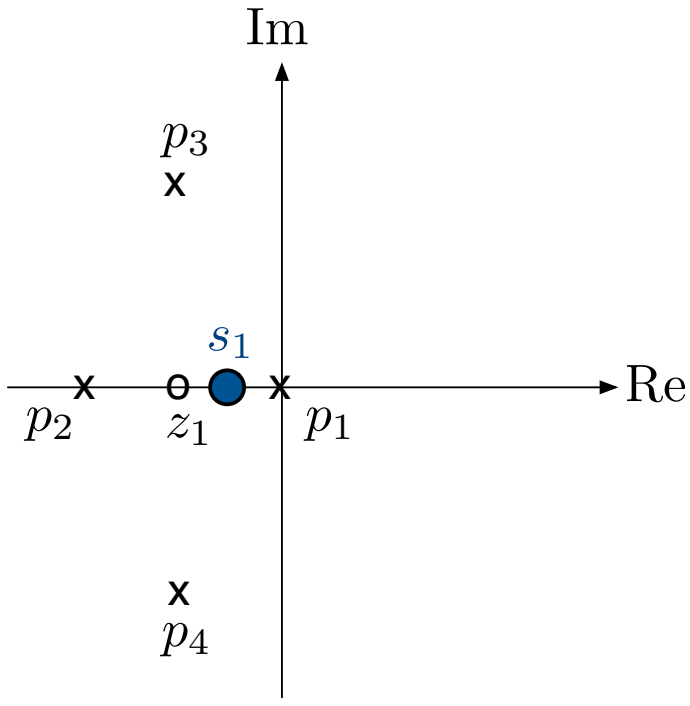
Rule D: Real Locus

So, we try test points:



$$\angle(s_1 - z_1) = 0^\circ \quad (s_1 > z_1)$$
$$\angle(s_1 - p_1) = 180^\circ \quad (s_1 < p_1)$$
$$\angle(s_1 - p_2) = 0^\circ \quad (s_1 > p_2)$$
$$\angle(s_1 - p_3) = -\angle(s_1 - p_4)$$
(conjugate poles cancel)

$$\angle(s_1 - z_1) - [\angle(s_1 - p_1) + \angle(s_1 - p_2) + \angle(s_1 - p_3) + \angle(s_1 - p_4)]$$
$$= 0^\circ - [180^\circ + 0^\circ + 0^\circ] = -180^\circ \qquad \checkmark s_1 \text{ is on RL}$$