

Handout 3: Gain and Phase Margins for unstable systems

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Gain and Phase Margins exist for all systems, including the unstable ones Example1: $H(s) = \frac{1}{1 - s/1}$

Sketch the Bode plot (Gain and Phase) to the left of next page. Sketch root-locus to the right of the page, above the Nyquist plot.

Phase margin for $K = -1.3$ is

$$H(s) = \frac{s^2 + 0.2s + 3}{3(s - 0.1)(s^2 + 0.2s + 1)}$$

Figure 1: 1 cm of space