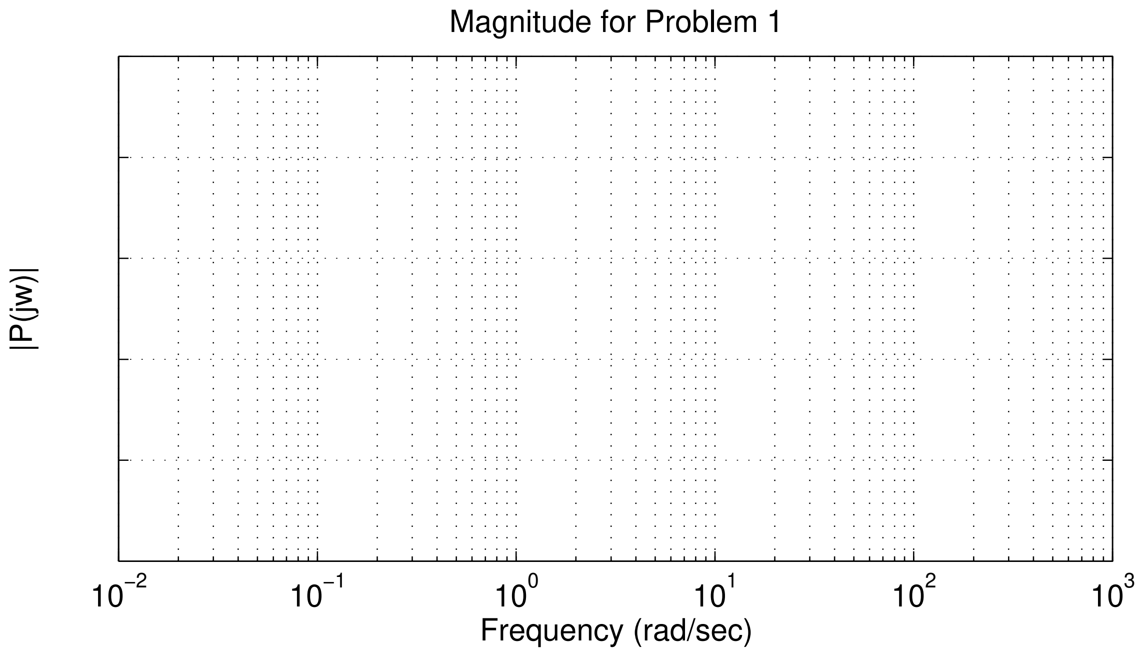
ECE 410 QUIZ 2 — B

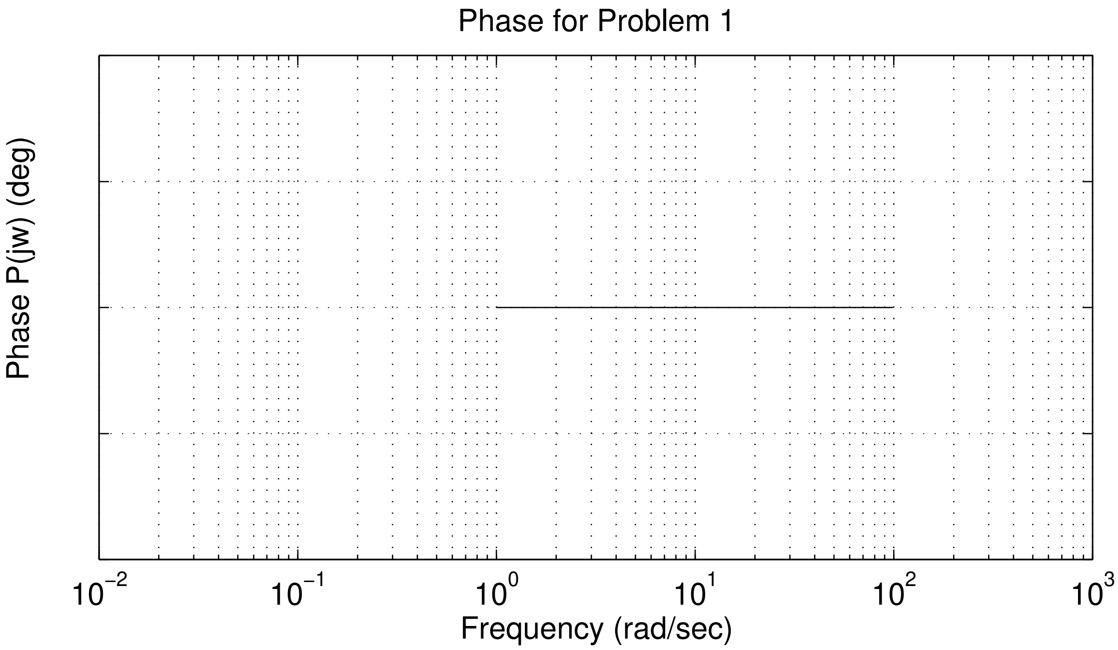
NAME: **NUMBER:**

Problem 1. (10 points) For the system

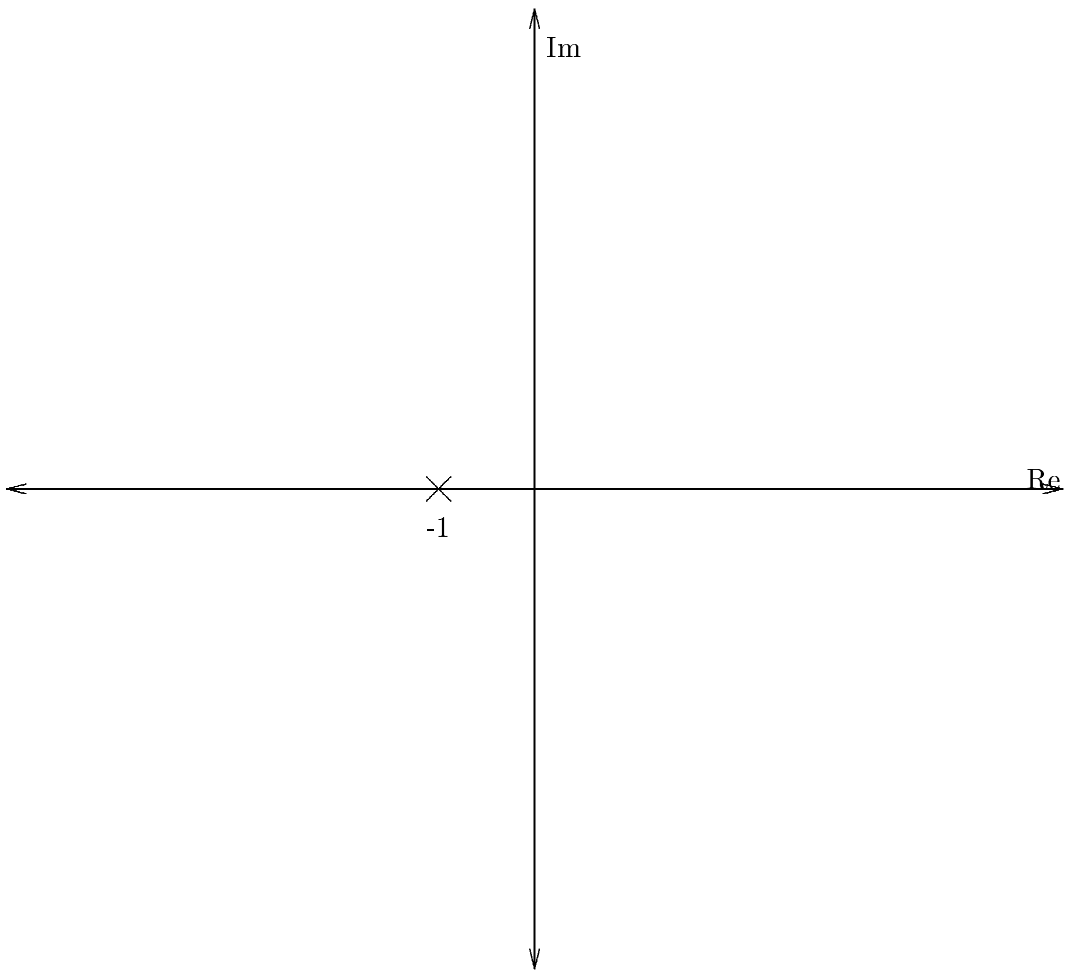
$$P(s) = \frac{33(s+10)^2}{s^2(s+1)}$$

- (6 points) sketch the (asymptotic approximation to the) Bode magnitude and phase on the axes below; and
- (3 points) sketch the Nyquist plot on the next page.





Nyquist Plot for Problem 1



- (1 point) Using these plots, what is the range of gain K for which $\frac{KP(s)}{1+KP(s)}$ is stable?

Range of K is ____________________

Problem 2. **(10 points)** On the axes below, sketch the (asymptotic approximation to the) Bode magnitude and phase plots for

$$P(s) = \frac{(s+3)}{s^2(s-10)}$$