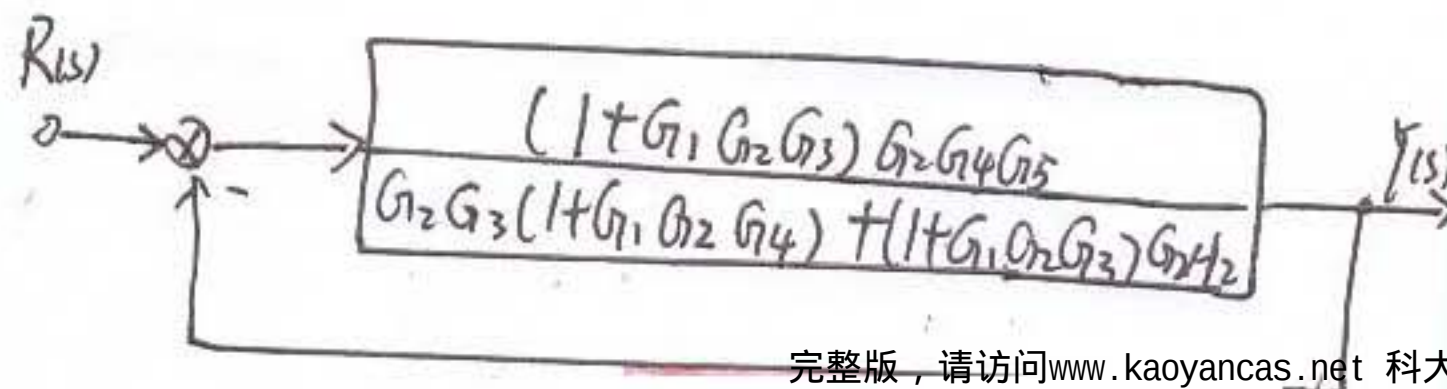
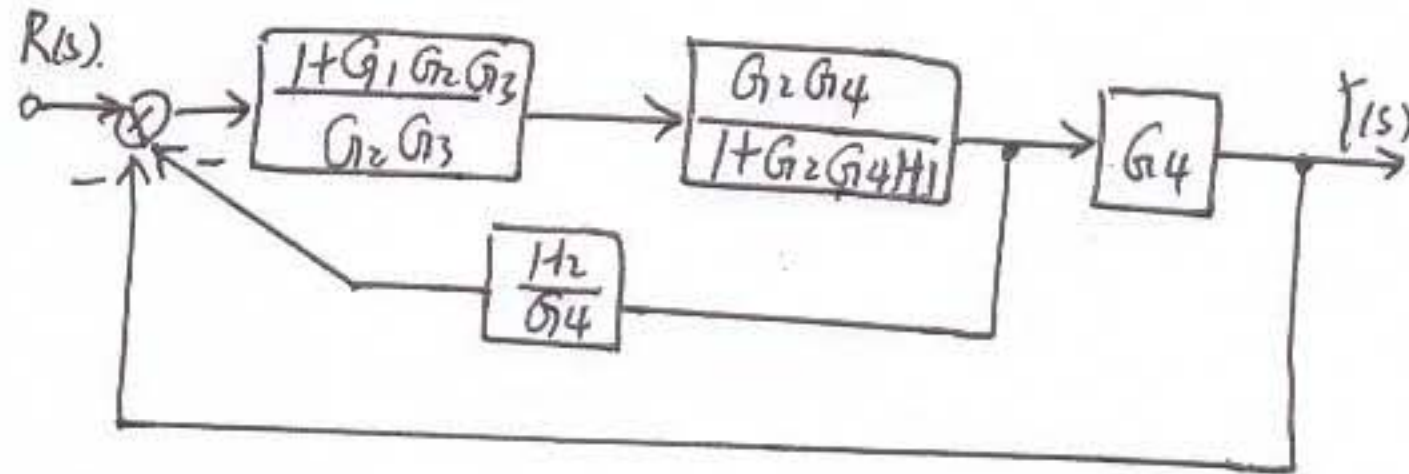
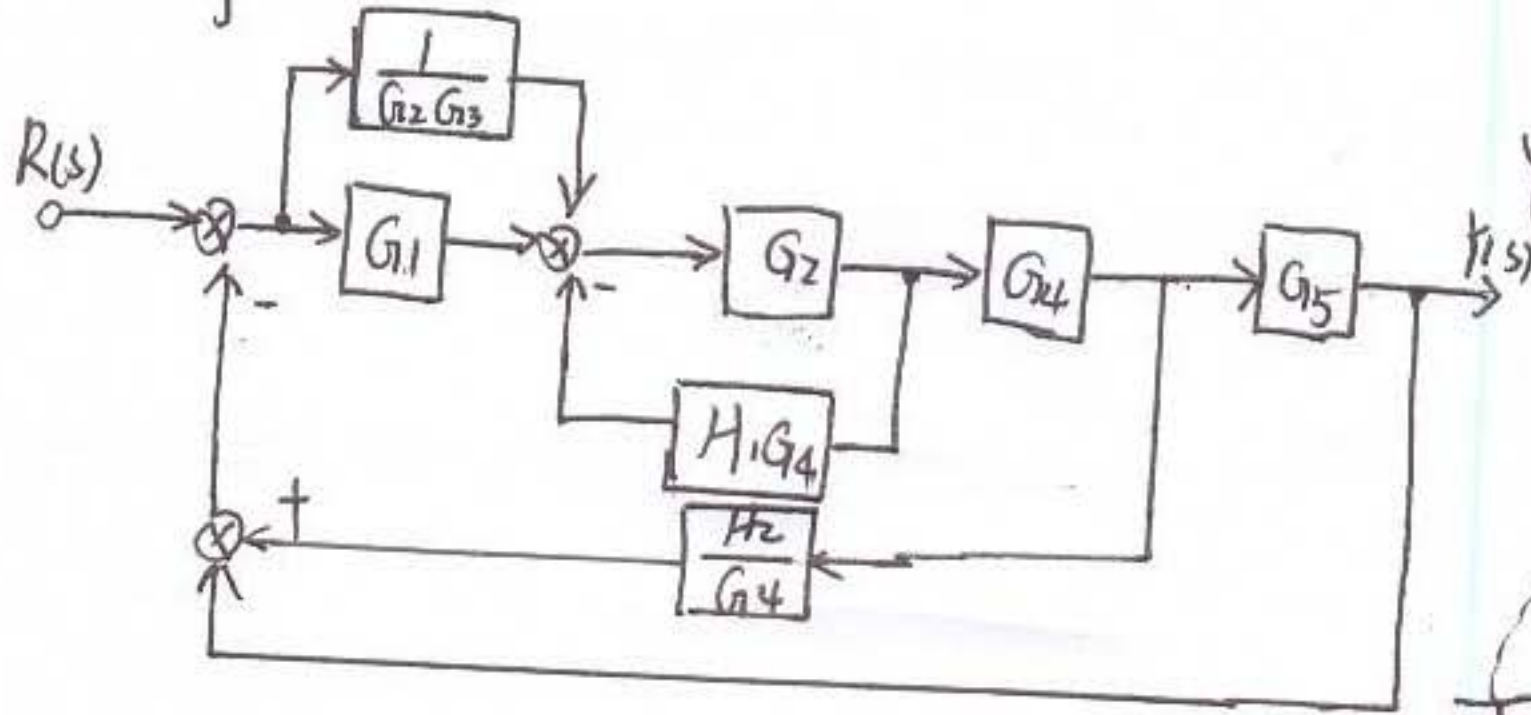


中国科学技术大学2000年自动控制原理845真题解析.

一. 解:



四. 解. $G(s) = \frac{-k(s+1)}{s^2(-s+1)}$

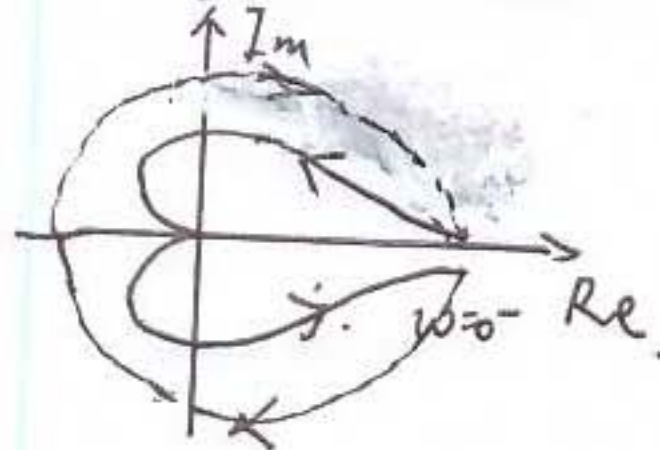
$\varphi(\omega) = -180^\circ - 180^\circ + \arctan \omega + \arctan \omega.$

$G(j0^+) = \infty \angle -360^\circ$

$G(j\infty) = 0 \angle -180^\circ.$

$\nu = 2.$

$\therefore \omega = 0^+$ 逆时针割作半
径无穷大 180° 圆弧



$\therefore$ 系统有一开环极点位于 S 右半平面

$\therefore p = 1.$

$\therefore N_+ = 0, N_- = \frac{1}{2}$

$N = N_+ - N_- = -\frac{1}{2}$

$Z = p - 2N \neq 0.$

$\therefore$ 闭环系统不稳定.