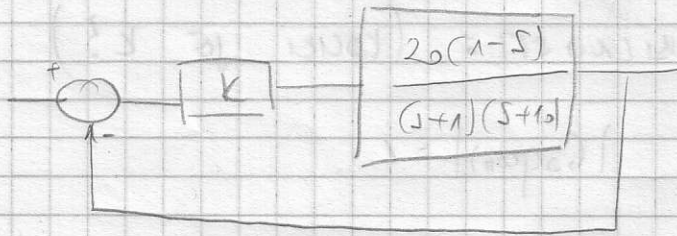
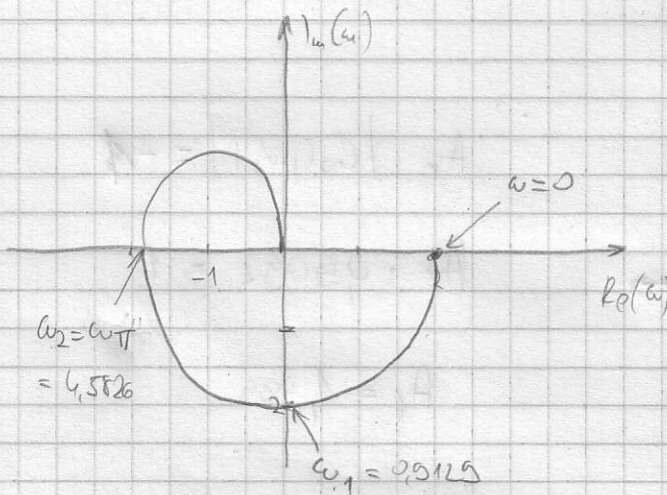


1



$$G_{OTV}(s) = K \cdot \frac{20(1-s)}{(s+1)(s+10)}$$

$$G_{OTV}(j\omega) = \underbrace{\frac{20K(10-12\omega^2)}{(-\omega^2+10)^2 + (11\omega)^2}}_{Re} + j \underbrace{\frac{20K(\omega^3-21\omega)}{(-\omega^2+10)^2 + (11\omega)^2}}_{Im}$$



КАЛАКИ ТОЧКИ:
 $\omega=0, K=1$ - ПЕРЕСЕЧЕНИЕ

$$Re(0) = 2K = 2$$

$$Im(0) = 0 = 0$$

$$Re(\omega_1) = 0 \quad \omega_1 = ?$$

$$10 - 12\omega_1^2 = 0 \Rightarrow \omega_1 = 0.9129$$

$$Im(\omega_1) = K \cdot (-1.957) \approx -2$$

$$Im(\omega_2) = 0 \quad \omega_2 = ?$$

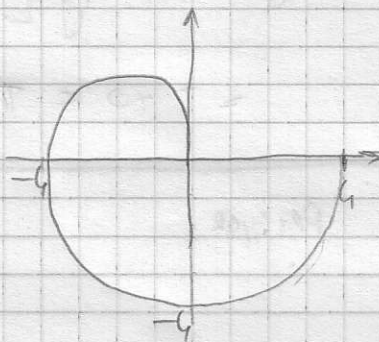
$$\omega^3 - 21\omega = 0 \quad \omega_2 = 4.5826$$

$$Re(\omega_2) = K \cdot (-1.818) = -1.81$$

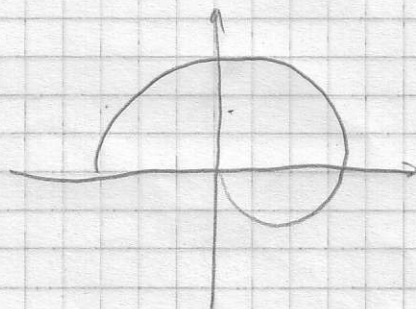
$$\omega = \infty$$

$$Re(\infty) = 0 \quad Im(\infty) = 0$$

2a $K=2$



2a $K < 0$



2A SUSTAV KA RBUU STABILNOSTI: (KOLIKI JE K?)

$$\arg[G_o(j\omega_r)] = -\pi \quad |G_o(j\omega_r)| = 1$$

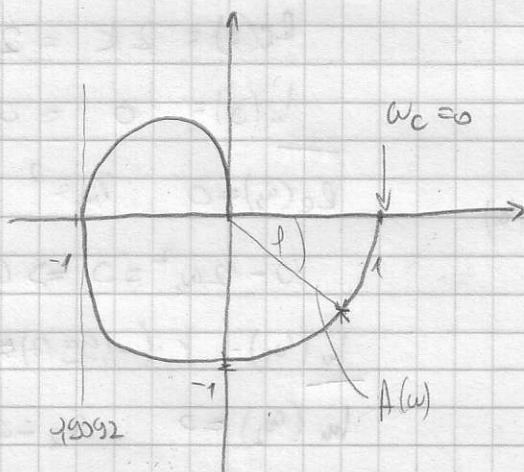
$$\operatorname{Re}(\omega_r) = -1$$

$$\operatorname{Im}(\omega_r) = 0$$

$$-1 = \frac{20K(10 - 12\omega_r^2)}{(-\omega_r^2 + 10)^2 + (11\omega_r)^2} \Rightarrow K = 0,5499$$

$K \in (0, 0,5499)$ SUSTAV JE STABILAN

ZA $K = 0,5$ KUKORIST



$$A_r \cdot |G_o(j\omega_r)| = 1$$

$$A_r \cdot 0,9092 = 1$$

$$A_r = 1,099$$

$$\gamma = \pi + \arg[G_o(j\omega_c)]$$

$$= \pi + 0 = \pi$$

$$\omega_c \Rightarrow |G_o(j\omega_c)| = 1$$

OPREĐEN ZA FAKTO OSIGURANJE PRIMER

