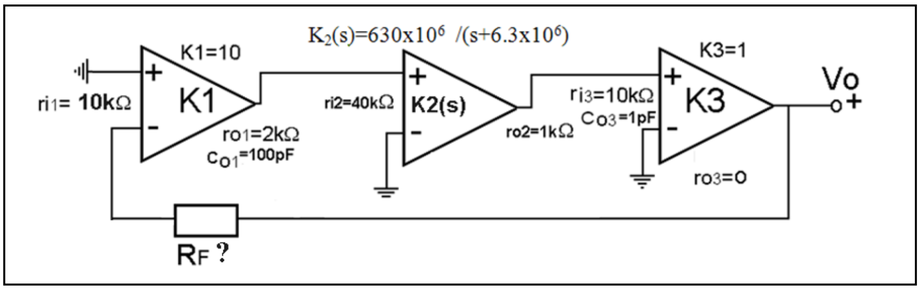
For the circuit, find the possible Sinusoidal oscillation frequency. Then, find the necassary Rf value which provides the oscillation.



$$\beta = \frac{r_{i1}}{R_F + r_{i1}}$$

$$A = -K_1 \cdot \frac{z_1}{r_{o1}+z_1} \cdot K_2(s) \, \frac{z_{i3}}{r_{o2}+z_{i3}} \cdot K_3$$

$$z_1 = \frac{r_{i2}}{sC_{o1} r_{i2}+1} \rightarrow \frac{z_1}{r_{o1}+z_1} = \frac{1}{1,05} \, \frac{5,25 \cdot 10^6}{s+5,25 \cdot 10^6}$$

$$z_{i3} = \frac{r_{i3}}{sC_{i3} r_{i3}+1} \rightarrow \frac{z_{i3}}{r_{o2}+z_{i3}} \cong \frac{1}{1,1} \cdot \frac{1,1 \cdot 10^9}{s+1,1 \cdot 10^9}$$

$$A = -1866 \cdot \frac{5,25 \cdot 10^6}{s+5,25 \cdot 10^6} \cdot \frac{6,3 \cdot 10^6}{s+6,3 \cdot 10^6} \cdot \frac{1,1 \cdot 10^9}{s+1,1 \cdot 10^9}$$

$A\Big|_{s=j\omega}$ → denominator $= (j\omega + 5,25 \cdot 10^6)(j\omega + 6,3 \cdot 10^6) \cdot (s+1,1 \cdot 10^9)$

$$\cong 36 \cdot 10^{21} - \omega^2(5,25 \cdot 10^6 + 6,3 \cdot 10^6 + 1,1 \cdot 10^9) - j\omega\underbrace{(\omega^2 - 33 \cdot 10^{12} - 12,7 \cdot 10^{15})}$$

If this is zero, loop phase is zero.

$$\omega^2 - 33 \cdot 10^{12} - 12,7 \cdot 10^{15} = 0 \rightarrow \omega \cong 113\,MHz$$

Loop phase is zero at this frequency

$$\beta A(j\omega)\Big|_{\omega = 113MHz} = \frac{r_{i1}}{R_F + r_{i1}} \cdot \frac{-31,5 \cdot 10^{24}}{36 \cdot 10^{21} - 1,4 \cdot 10^{25}} = 1$$

ignorance

$$\frac{\overset{\rightarrow 10k}{r_{i1}}}{R_F + r_{i1}} = \frac{14}{31,5} \rightarrow R_F \cong 12,2k$$

If this Rf value is used, the circuit oscillates at 113MHz.