Problem 1

Find the frequency of the poles in the circuits below

Circuit 1

[Diagram of Circuit 1]

Circuit 2

[Diagram of Circuit 2]
Problem 2

\[ \beta = \frac{l_0}{l_x} \]

b) Using the approximations:

\[ g_m \gg sC_u \]
\[ s(C_{\pi} + C_u) \gg \frac{1}{f_H} \]

Show that \( W_T = \frac{g_m}{C_{\pi} + C_u} \)

c) Why are the approximations used in part b valid?
a) Find the midband gain $V_0/V_s$

b) Find the frequency of all low frequency poles.

c) Find $\omega_L$

d) Draw the Bode magnitude plot
Problem 4

a) Find $V_o/V_s$ at midband
b) Find the frequency of all low frequency poles
c) Find $\omega_L$

Assume: $\beta = \infty$ or quite big
$R_{EE} = \infty$ or really Really Really Really big