MMAN3200

Tutorial Problems for BODE plots

Problem 1) Sketch the Bode Plots for the following given transfer functions:

a) $$H(s) = \frac{100}{(s/2+1)\cdot(2s+1)}$$

b) $$H(s) = \frac{30\cdot(s+8)}{s\cdot(s+2)\cdot(s+4)}$$

c) $$H(s) = \frac{200\cdot(s+8)}{(s+2)\cdot(s+4)\cdot(s+20)}$$

d) $$H(s) = \frac{(s/100+1)\cdot(s/120+1)}{s\cdot(s+4)\cdot(s+1)}$$

Problem 2)

Determine the gain margin and phase margin, for the cases *b*, *c* and *d* in problem 1.

Problem 3)
Just by inspecting the following TF,

$$H(s) = \frac{23\cdot(s+0.001)}{(s+2)\cdot(s+1)}$$

Is it true that its gain margin is equal to infinite? Justify your answer.