% Inverting Amplifier Bandpass Filter

C1 = 0.1e-6; K = 7.3; j = sqrt(-1);

f\_lower = 100; f\_upper = 30000;

R1 = 1/(2\*pi\*C1\*f\_lower);

Rf = K\*R1;

Cf = 1/(2\*pi\*Rf\*f\_upper);

f\_start = f\_lower/10; f\_stop = f\_upper\*10;

step = (f\_stop - f\_start)/4096; freq = f\_start:step:f\_stop;

LPF = (1./(1.+j\*2.\*pi.\*freq.\*Rf.\*Cf));

HPF = ((j.\*2.\*pi.\*freq.\*R1.\*C1)./(1+j.\*2.\*pi.\*freq.\*R1.\*C1));

Tf = -K.\*LPF.\*HPF;

Ms = 20\*log10(abs(Tf));

Ps = (180/pi)\*angle(Tf);

semilogx(freq,Ms),grid

figure

semilogx(freq,Ps),grid

