# Code

clc;

clear all;

close all;

% define the range of frequencies

w = 0:0.01:70;

% define the transfer function H(w) here

H = 2./(400-w.^2+1j\*w);

% plot the magnitude vs frequency on linear axes

figure;

plot(w,abs(H),'linewidth',2);grid on;

xlabel('frequency rad/sec');

ylabel('|H(w)|');

title(' magnitude response');

% plot the magnitude vs frequency on log axes

figure;

semilogx(w,abs(H),'linewidth',2);grid on;

xlabel('frequency rad/sec');

ylabel('|H(w)|');

title('magnitude response');

% plot the magnitude in dB vs frequency on log axes

figure;

semilogx(w,20\*log10(abs(H)),'linewidth',2);grid on;

xlabel('frequency rad/sec');

ylabel('|H(w)| dB');

title('magnitude response');

% plot the phase vs frequency on linear axes

figure;

plot(w,angle(H)\*57.3,'linewidth',2);grid on;

xlabel('frequency rad/sec');

ylabel('degrees');

title('phase response');

% plot the phase vs frequency on log axes

figure;

semilogx(w,angle(H)\*57.3,'linewidth',2);grid on;

xlabel('frequency rad/sec');

ylabel('degrees');

title('phase response');

# Output









