% //verified programme  
clear all;

clc;

t=0:10:1000;

zeta=[0 0.1 0.8 1 1.5];

wn=0.01;

for i=1:5

num=[0 0 1];

den=[1 2\*zeta(i)\*wn wn^2];

[y(1:length(t),i),x]=step(num,den,t);

plot(t,y)

title('step response')

xlabel('time')

ylabel('response')

hold on

end

gtext('zeta=0')

gtext('zeta=0.1')

gtext('zeta=0.8')

gtext('zeta=1')

gtext('zeta=1.5')

