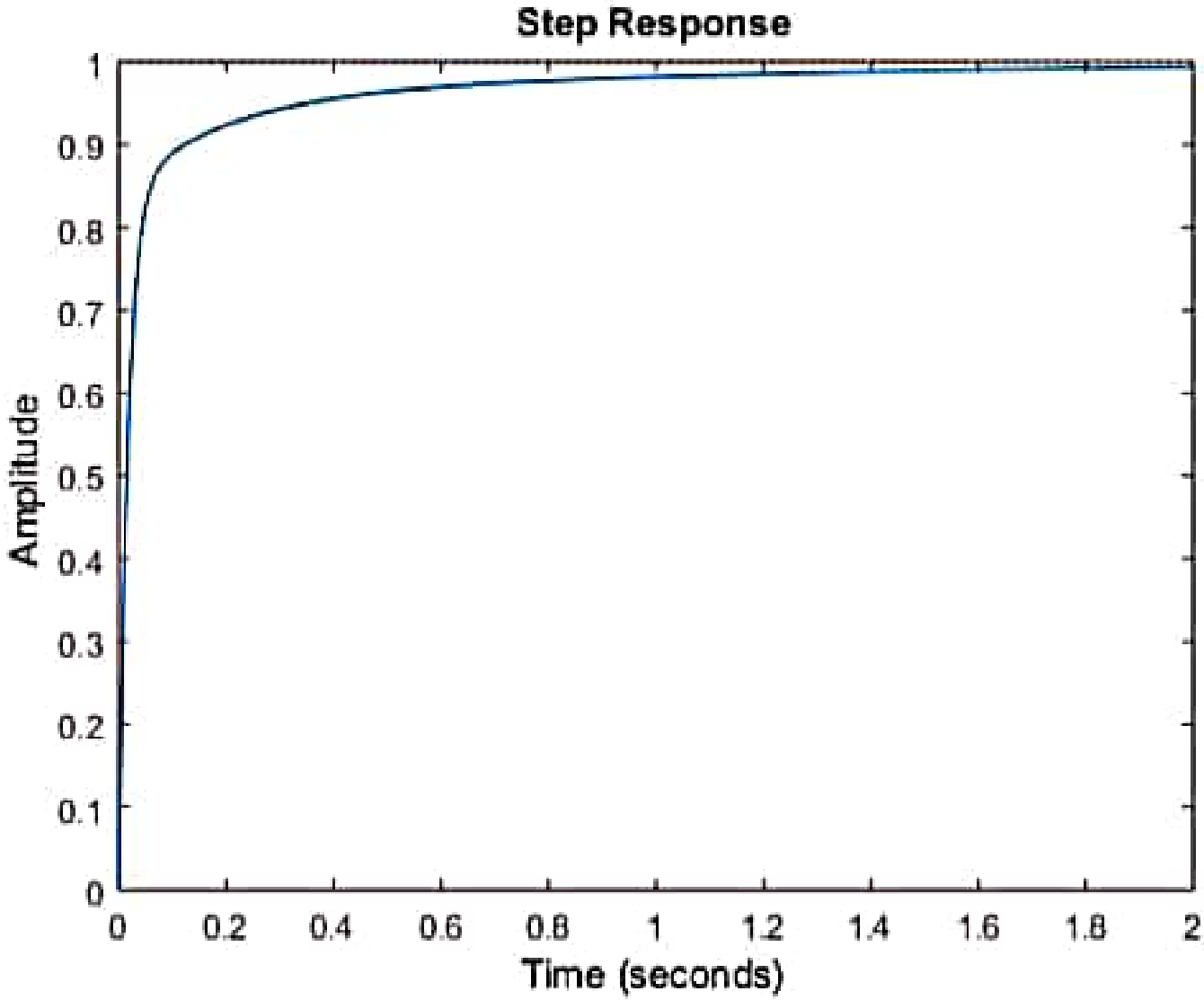

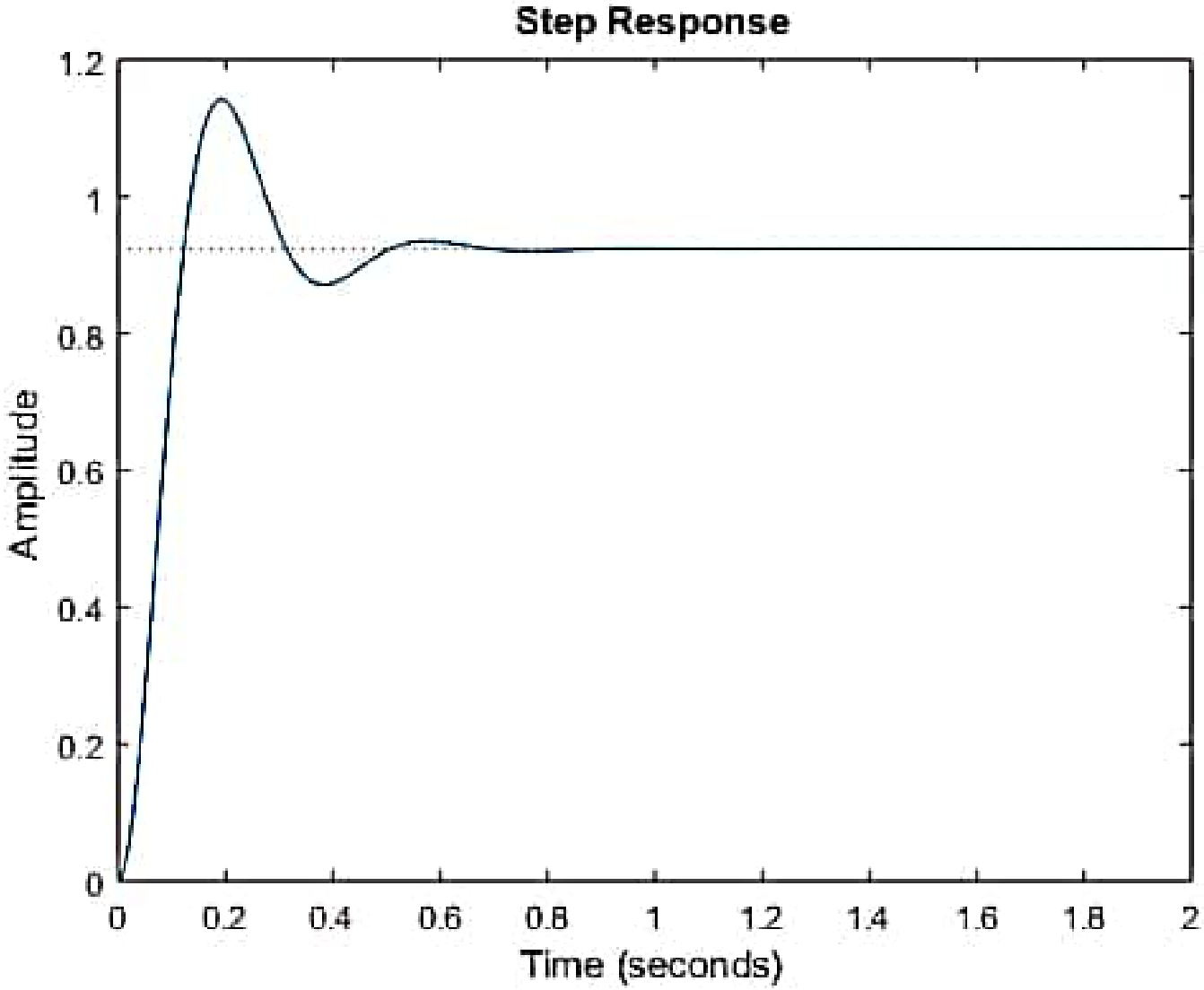

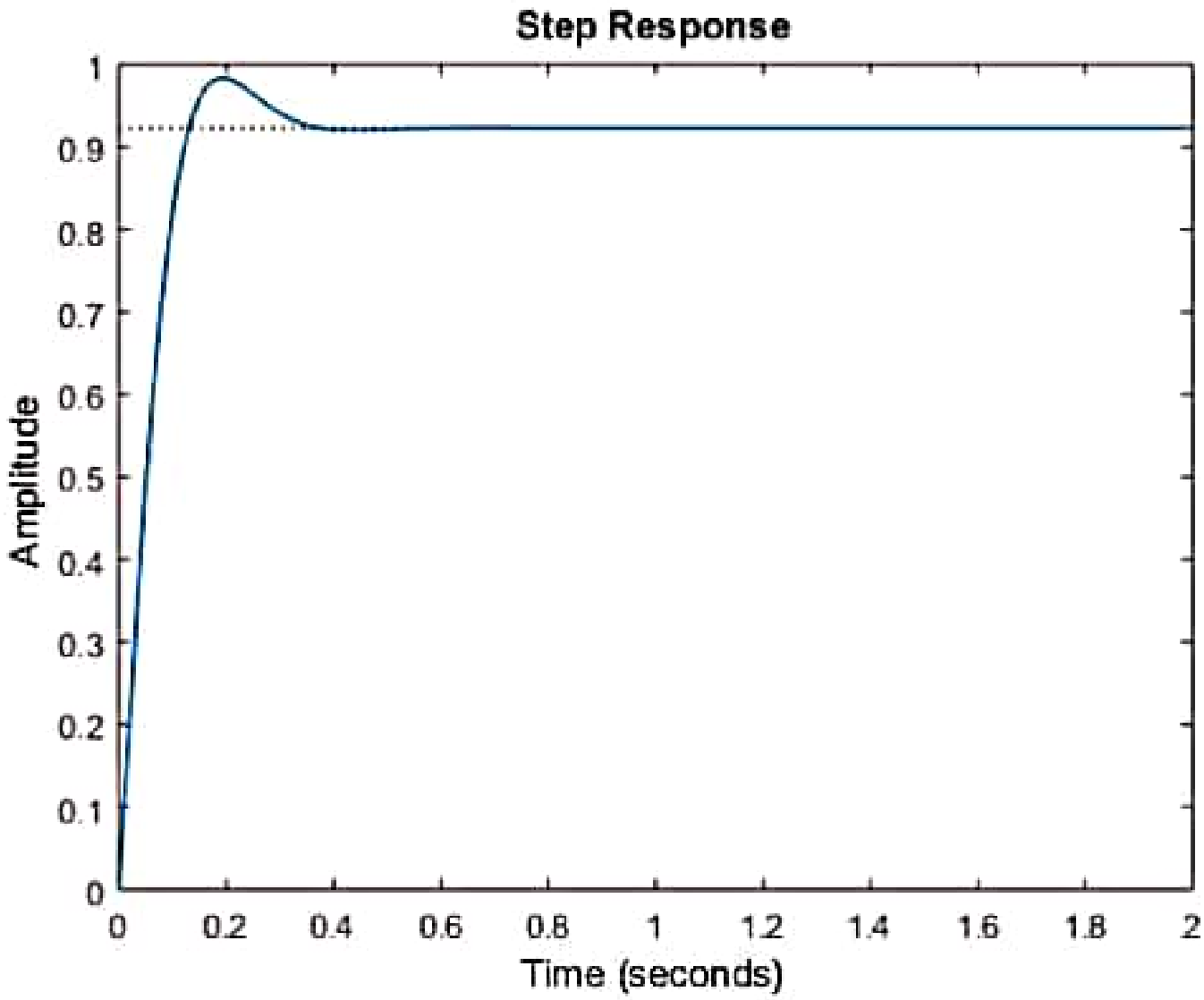

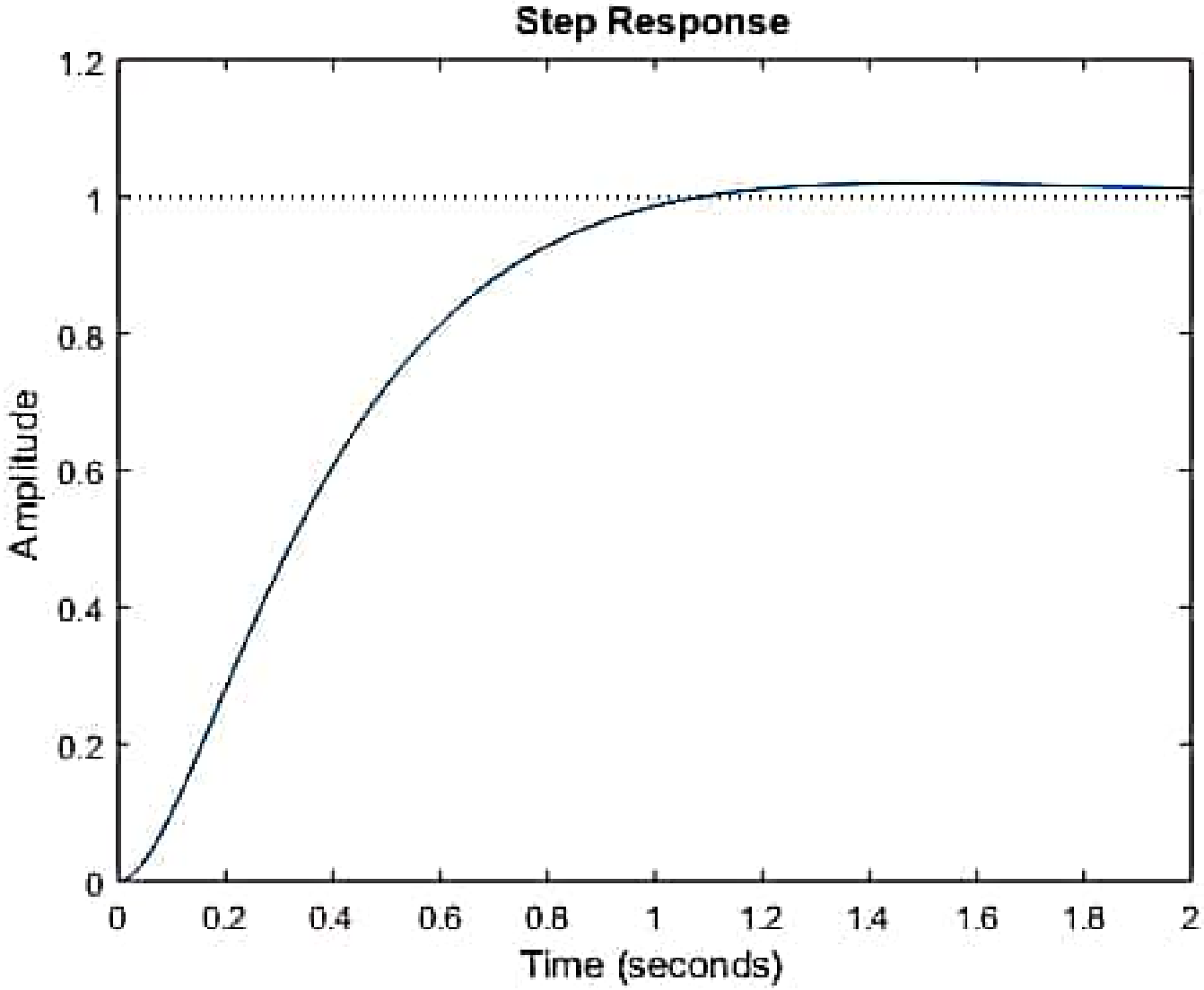

```
% P,PI AND PID CONTROLLER.
%Program
% OPEN LOOP STEP RESPONSE:
num=1;
den=[1 15 25];
plant=tf(num,den);
figure(1)
step(plant)

%PROPORTIONAL CONTROLLER
kp=300;
contr=kp;
sys_cl=feedback(contr*plant,1);
t=0:0.01:2;
figure(2)
step(sys_cl,t)

%PROPORTIONAL DERIVATIVE CONTROLLER
kp=300;
kd=10;
contr=tf([kd kp],1);
sys_cl=feedback(contr*plant,1);
t=0:0.01:2;
figure(3)
step(sys_cl,t)

%PROPORTIONAL-INTEGRAL CONTROLLER
kp=30;
ki=70;
contr=tf([kp ki],[1 0]);
sys_cl=feedback(contr*plant,1);
t=0:0.01:2;
figure(4)
step(sys_cl,t)
```

```
%PROPORTIONAL-INTEGRAL-DERIVATIVE CONTROLLER
kp=350;
ki=300;
kd=50;
contr=tf([kd kp ki],[1 0]);
sys_cl=feedback(contr*plant,1);
t=0:0.01:2;
figure(5)
step(sys_cl,t)
```