```
clear

m = 1;
k = 0;
mu = .2;

dt = .001;
n=10000;

f=zeros(1,n);
for i=1:n

    f(i) = 3*sin(.2*2*pi*(i-1)*dt);
end

p(1) = 0;
v(1) = 0;
tt(1) = 0;

%  this is really ex 2 in the book

for i=2:n+1
 tt(i) = tt(i - 1) + dt;
 a(i-1) = -k*p(i - 1)/m + mu*(-10)*sign(v(i - 1)) + f(i-1)/m;
 p(i) = p(i-1) + v(i-1)*dt;
 v(i) = v(i-1) + a(i-1)*dt;

 if (v(i-1)*v(i) <= 0)
     if (abs(k*p(i-1)+ f(i-1)/m) < mu*10*m)
         i
         p(i) = p(i-1);
         v(i) = 0;
     end
 end


end



plot(tt, p)
```