figure(1)

v\_0=15;

h\_0=2;

g=9.81;

t = linspace(0,2,200);

y=(-g/2)\*(t.^2)+(v\_0)\*(t)+(h\_0);

plot(t,y)

title('Trajectory of the ball')

xlabel('time')

ylabel('height y')

figure(2)

load('noisyTrajectory.mat')

plot(t,y,'r')

hold on

plot(t,yn,'b')

hold off

title('Exact trajectory and noisy datapoints')

xlabel('time')

ylabel('height y')

legend('exact','noisy')

g\_estimated = 10.825533

v0\_estimated = 16.100356

h0\_estimated = 1.542915

figure(3)

yEstimated = (-g\_estimated/2)\*(t.^2)+(v0\_estimated)\*(t)+(h0\_estimated)

plot(t,yEstimated)

title('Estimated trajectory')

xlabel('time')

ylabel('height y')

ssdExact = 237.650609

ssdEstimated = 232.238923