

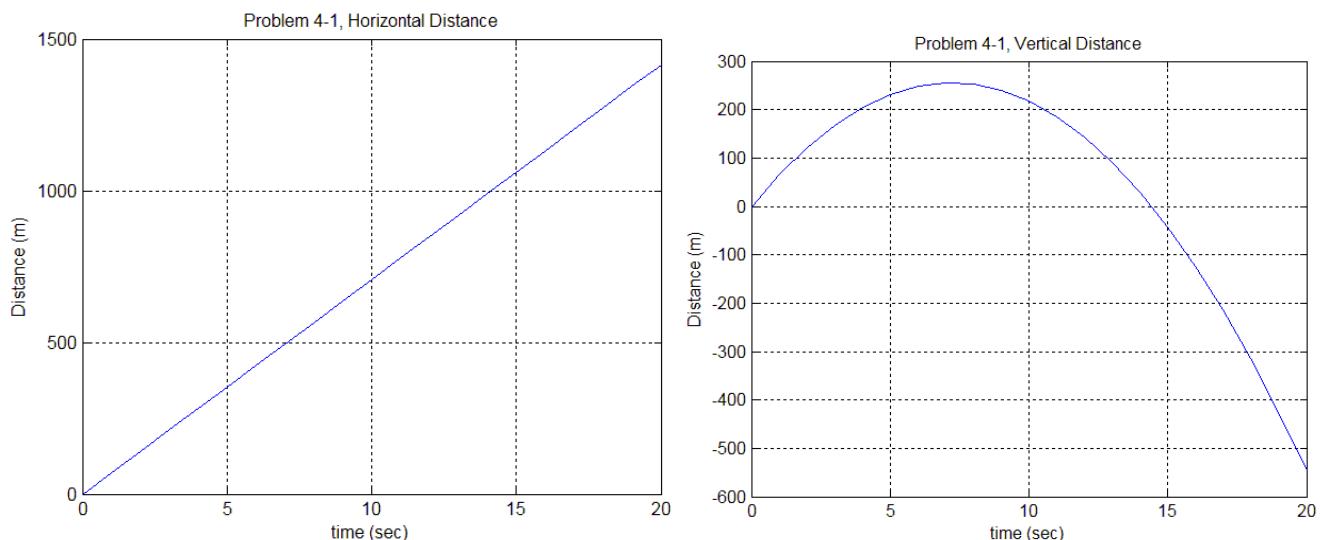
## EE322 Fall 08 Homework Problem Set 5 (PS05) SOLUTIONS

All problems are from “Introduction to MATLAB 7” by Etter et al.

### 1. Ch. 4, Problem 1.

```
% Problem 4-1
V0=100;
theta=pi/4;
g=9.8;
t=0:1:20;
H = t*V0*cos(theta);
V = t*V0*sin(theta)-1/2 * g*t.^2;    % note that you must use .^2 since t is a
                                           % vector
figure(1),plot(t,H),xlabel('time (sec)'),ylabel('Distance (m)')
title('Problem 4-1, Horizontal Distance'),grid on

figure(2),plot(t,V),xlabel('time (sec)'),ylabel('Distance (m)')
title('Problem 4-1, Vertical Distance'),grid on
```

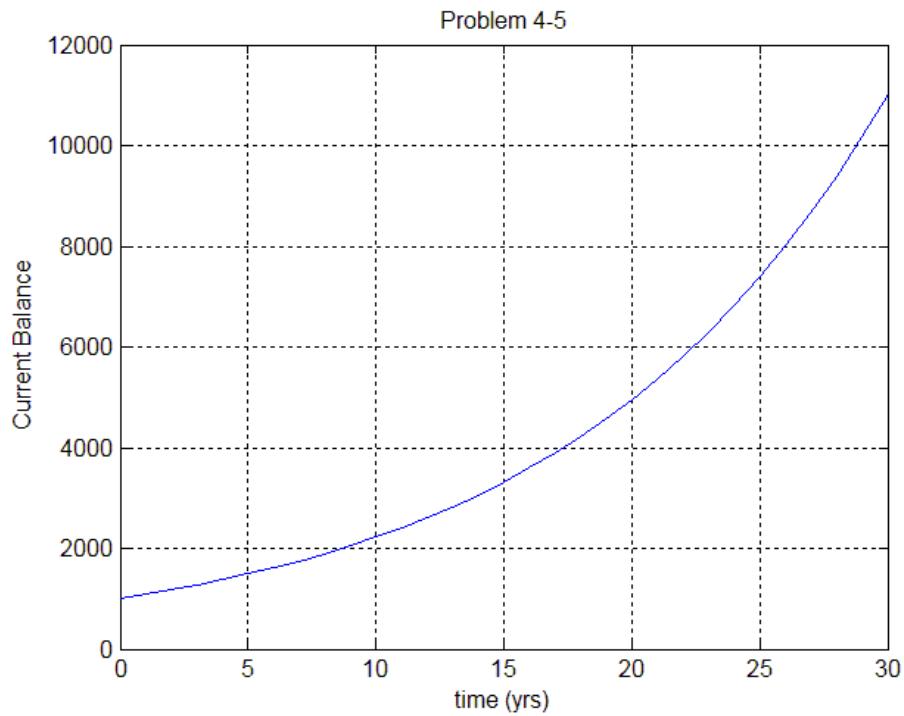


Note that after ~14 seconds, the vertical distance goes negative...it is at this point when the projectile would have hit the earth and stopped.

### 2. Ch. 4, Problem 5.

```
% Problem 4-5
P0=1000;
r=0.08;
t=0:1:30;

P=P0*exp(r*t);
figure(1),plot(t,P),xlabel('time (yrs)'),ylabel('Current Balance')
grid on, title('Problem 4-5')
```



### 3. Ch. 4, Problem 6.

```
% Problem 4-6
P0=1000;
r=0.08;
t=0:1:30;
P=P0*exp(r*t);

figure(1)
subplot(2,2,1) % first plot
plot(t,P), title('Problem 4-6a'), xlabel('time (yrs)'), ylabel('Current Balance'), grid on

subplot(2,2,2) % second plot
semilogx(t,P), title('Problem 4-6b'), xlabel('time (yrs)'), ylabel('Current Balance'), grid on

subplot(2,2,3) % 3rd plot
semilogy(t,P), title('Problem 4-6c'), xlabel('time (yrs)'), ylabel('Current Balance'), grid on

subplot(2,2,4)
loglog(t,P), title('Problem 4-6d'), xlabel('time (yrs)'), ylabel('Current Balance'), grid on
```

