

## Ch\_8\_Lesson\_1\_Ex\_1

```
clear

m = 1; % initialize constants
k = .2;
c = .3;

dt = 1;
n=100;

p(1) = -10; % initialize state
v(1) = 0;
t(1) = 0;

for i=2:n+1
    t(i) = t(i - 1) + dt;
    p(i) = p(i - 1) + v(i - 1)*dt;
    v(i) = v(i - 1) - k * p(i - 1) *dt/m - c * v(i - 1)* dt/m;
end

plot(t, p)
```