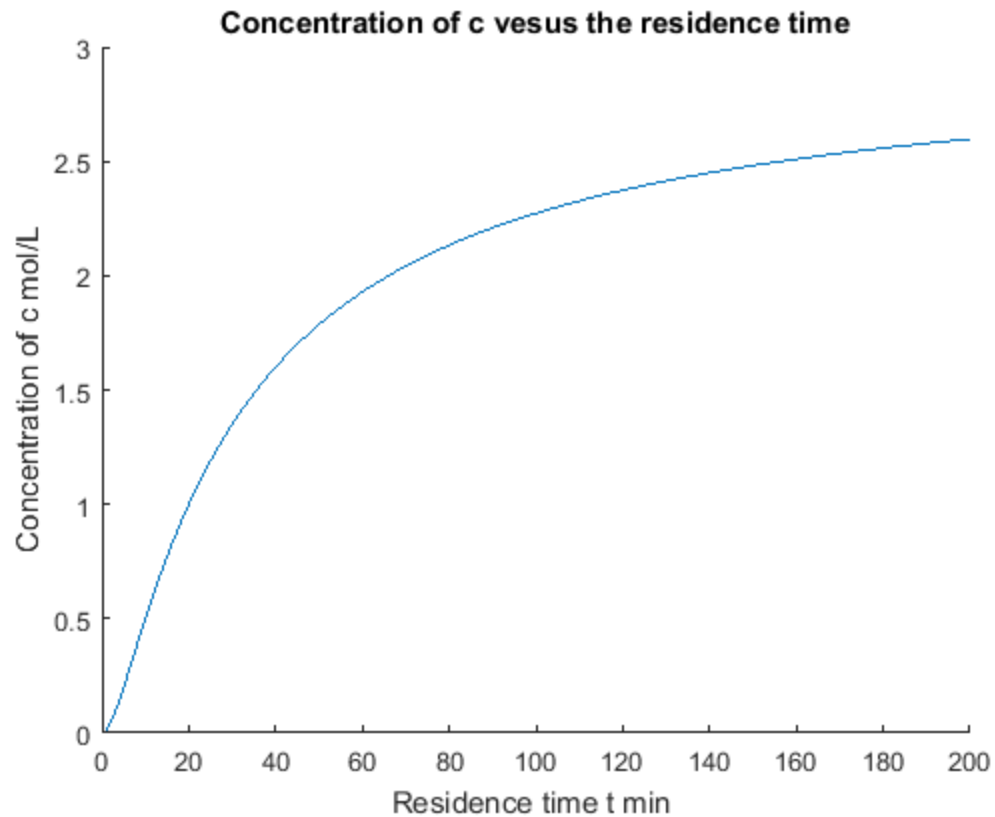

```
%{  
Written by: Tianyu Gao  
Born on: Sept 9, 2015  
%}  
clear all  
clc  
close
```

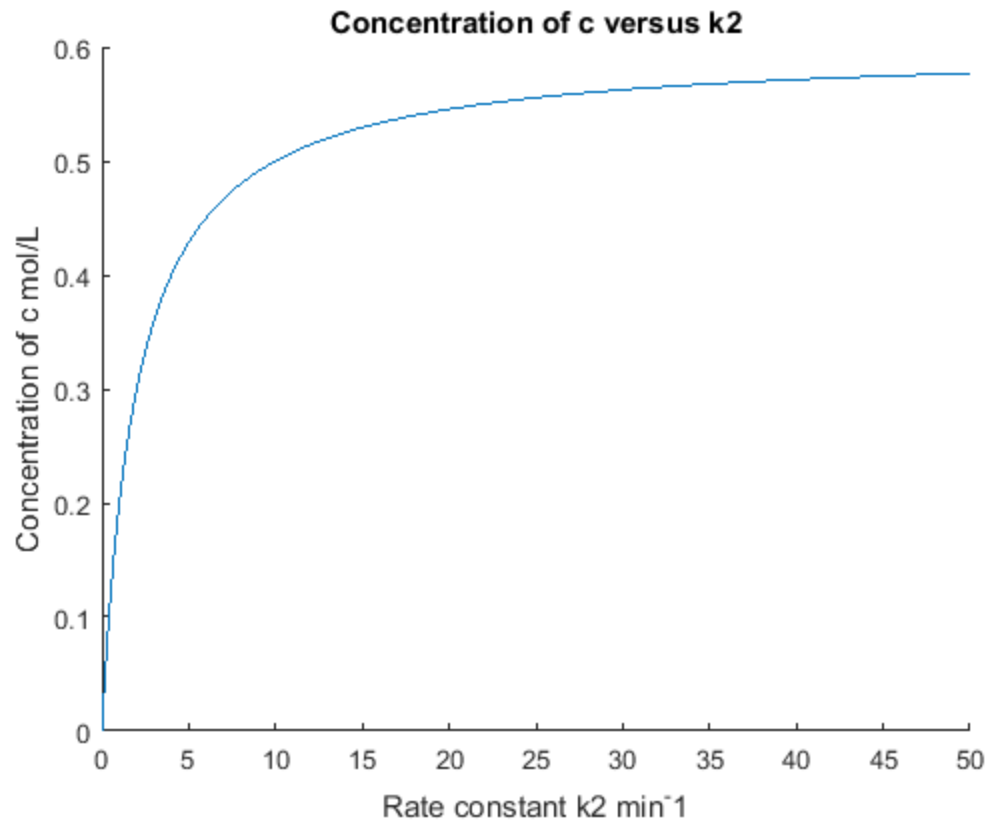
Problem a)

```
k1=3/60;  
k2=0.1;  
c0=[3 0 0]';  
figure  
hold on  
for t= 1:1:200  
    A=[1+k1*t 0 0; -k1*t 1+k2*t 0; 0 -k2*t 1]; % A is the coefficients  
    matrix  
    c=A\c0;  
  
    m(t,:)=t; % m to record t  
    n(:,t)=c; % n to record c  
  
end  
plot(m,n(3,:), '-');  
title('Concentration of c vesus the residence time')  
xlabel('Residence time t min ');  
ylabel('Concentration of c mol/L');
```



Problem b)

```
figure;
hold on
t=0.5;
k1=0.5;
i=1;
for k2= 0:0.1:50;
    A=[1+k1*t 0 0; -k1*t 1+k2*t 0; 0 -k2*t 1];
    c=A\c0;
    p(i)=k2;
    q(i)=c(3,:);
    i=i+1;
end
plot(p,q);
title('Concentration of c versus k2');
xlabel('Rate constant k2 min^-1');
ylabel('Concentration of c mol/L');
```



Published with MATLAB® R2015a