1b

For k=0.1



y\* vs 1/kd

x\* vs 1/kd

Θ vs 1/kd

For k=10

y\* vs 1/kd

x\* vs 1/kd

Θ vs 1/kd



syms a x y theta kd k1 k2 k3 k4;

k=10;

kd=[1:0.001:1000];

h=1./kd;

theta=1./(1+kd);

a=(1-(5.\*theta));

b=-(1+k)+((1-k).\*5.\*theta);

c=5.\*theta.\*k;

x=(-b-sqrt((b.^2)-(4.\*a.\*c)))./(2.\*a);

d=(1-10.\*x);

e=-(1+k)+((1-k).\*10.\*x);

f=10.\*x.\*k;

y=(-e-sqrt(e.^2-4.\*d.\*f))./(2.\*d);

ylabel('Dimensionless qty');

xlabel('1/kd')

figure(1)

hold on

plot(h,theta,'r');

plot(h,x,'b');

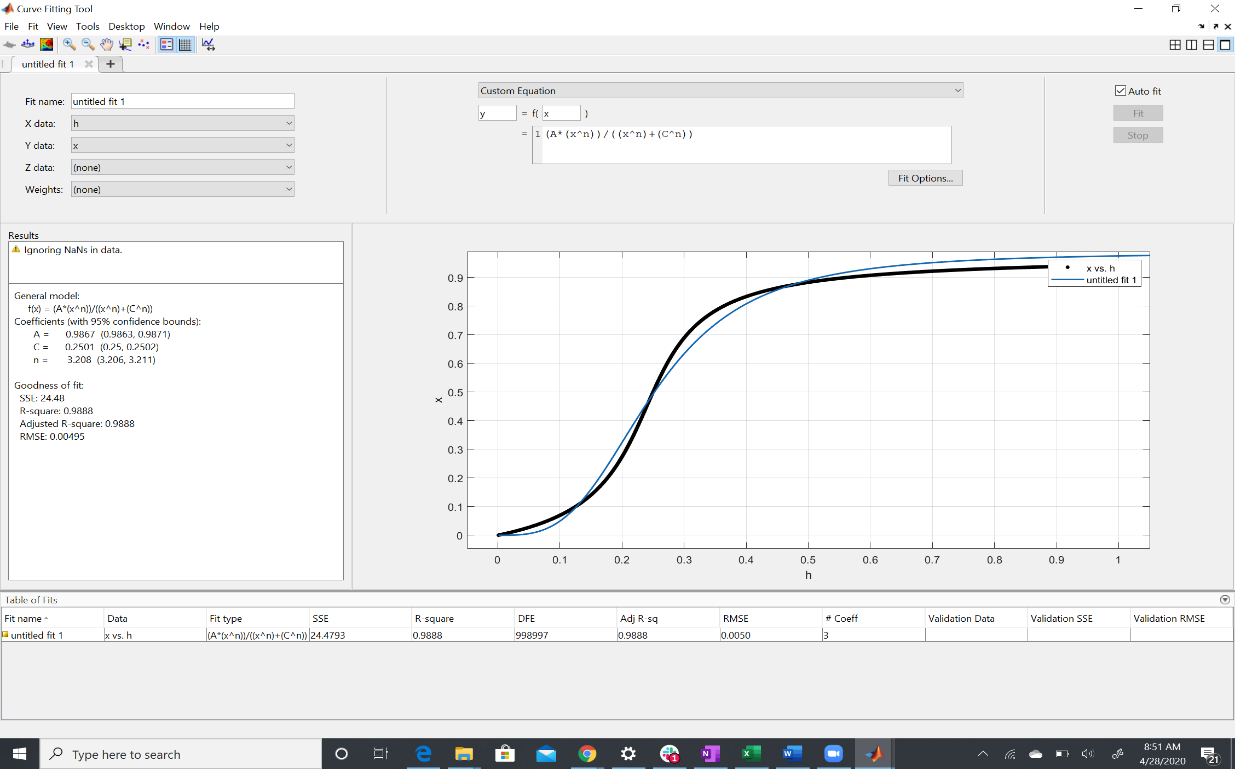
plot(h,y,'g');

grid on;

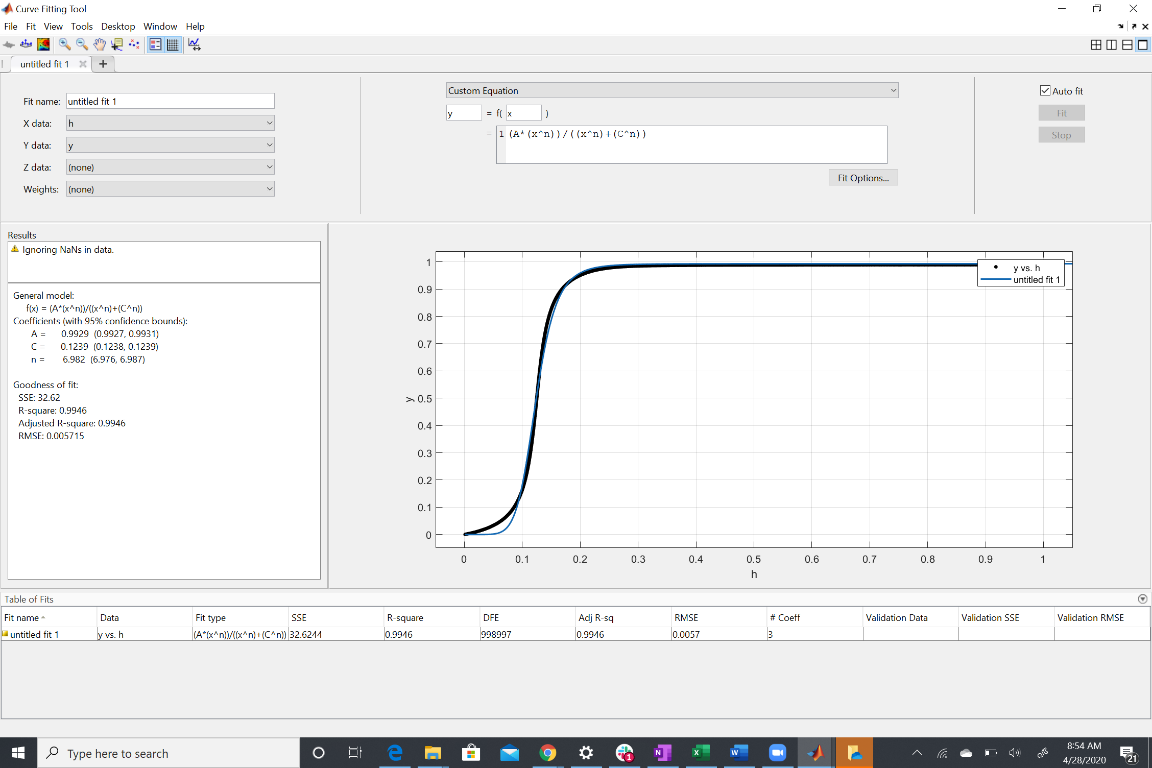
1c

K=0.1

x\* vs 1/kd

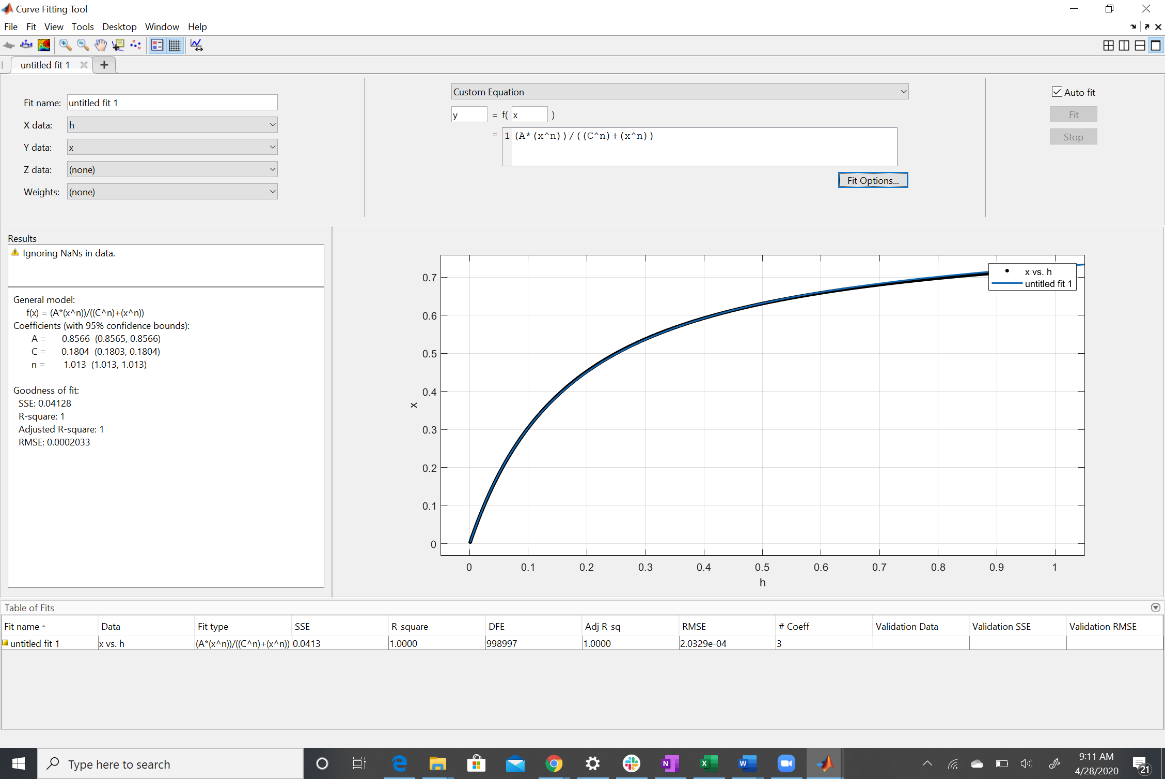


Y\* vs 1/kd

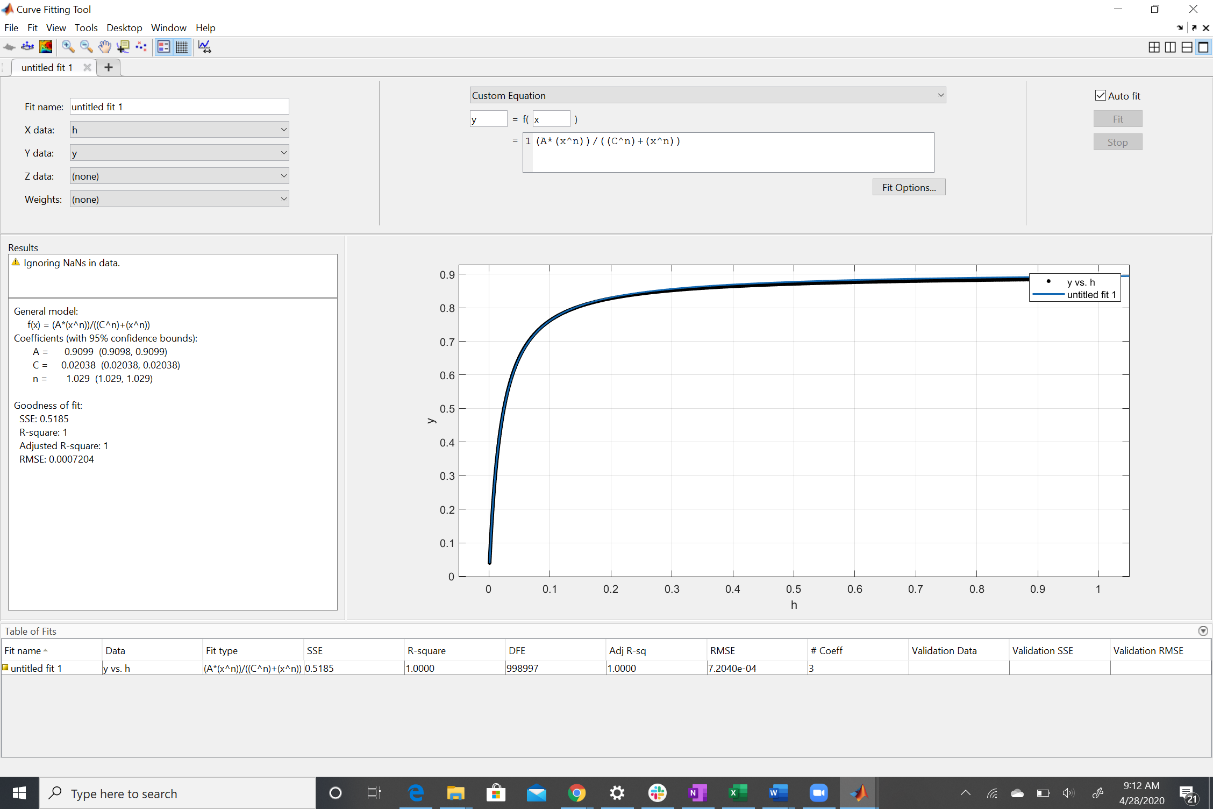


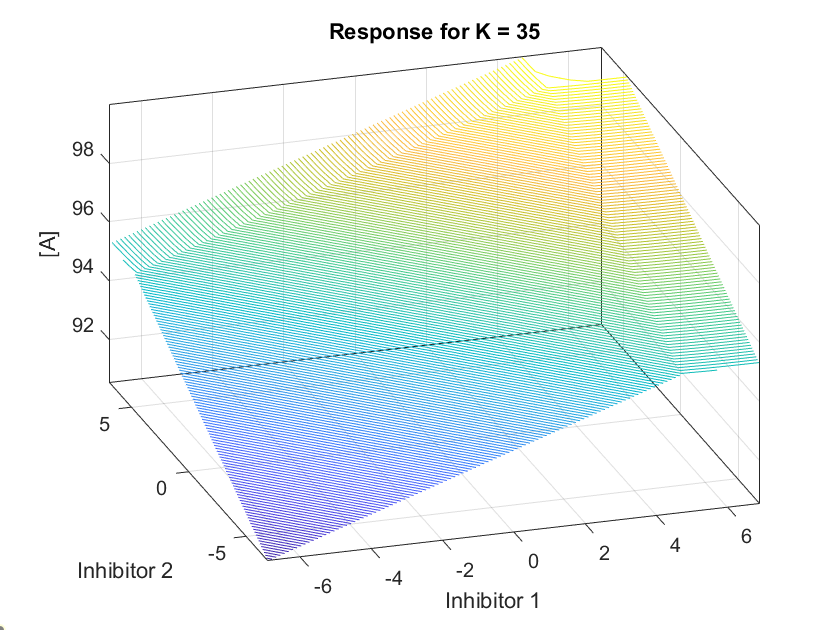
K=10

x\* vs 1/kd



y\* vs 1/kd





**5**

I1=linspace(0.001,1000,10);

I2=linspace(0.001,1000,10);

l=length(I1); k=35;

A\_soln = zeros(length(I1),length(I2));

for i = 1:l

for j = 1:l

i1=I1(i);

i2=I2(j);

eqn= 100==a+( (5\*a)./(k\*i1 + a.\*i1 + k+a))+( (5\*a)/(k\*i2 + a\*i2 + k+a));

A=solve(eqn,a);

A=double(A);

A=A(A>=0);

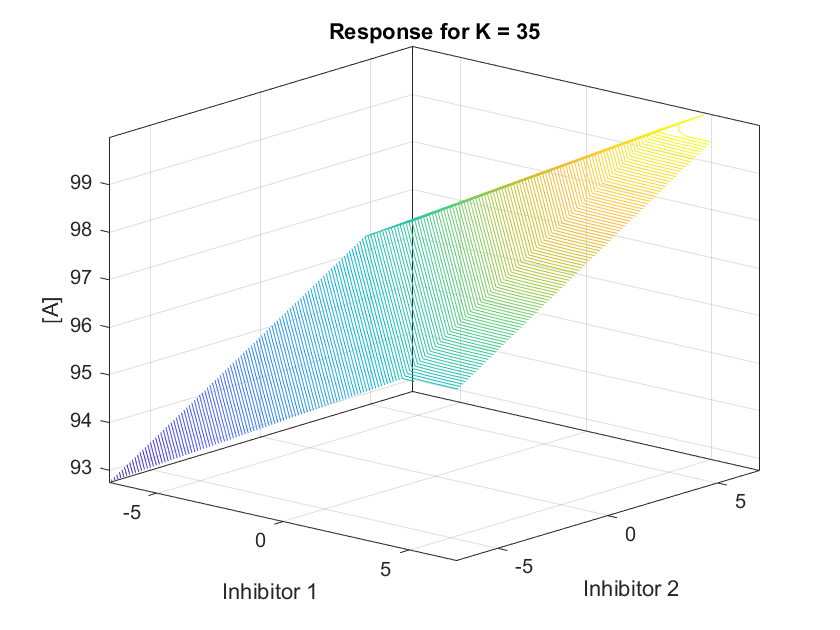
A\_soln(i,j)=A;

j=j+1;

end

i=i+1;

end



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A=double(A);

A=A(A>=0);

A\_soln(i,j)=A;

j=j+1;

end

i=i+1;

end