```matlab
%5 task set F #3


ti=0;
tf=24;
npts=240;
T0=75;

[out1a,out2a]=rk4(ti,tf,npts,T0,@differential1);
[out1b,out2b]=rk4(ti,tf,npts,T0,@differential2);

maxIndoorA = max(out2a,[],'all'); %
indexOfmaxIndoorA = find(out2a==maxIndoorA);%
timeOfmaxIndoorA = out1a(indexOfmaxIndoorA);%

indexOfBrokenA = find(out2a>=81);%
timeOfBrokenA = out1a(indexOfBrokenA);%

maxIndoorB = max(out2b,[],'all'); %
indexOfmaxIndoorB = find(out2b==maxIndoorB);%
timeOfmaxIndoorB = out1b(indexOfmaxIndoorB);%

indexOfBrokenB = find(out2b>=81);%
timeOfBrokenB = out1b(indexOfBrokenB);%

%T(t)
figure(1);
hold on
plot(out1a,out2a,'blue');
plot(out1b,out2b,'red');
title('Indoor temperature over time (F3)')
xlabel('Time (hr)','FontSize',16)
ylabel('Temperature (ºF)','FontSize',16)
legend('\kappa_d=2','\kappa_d=0.5')
xticks(0:4:24)
xlim([0 24])
grid on
grid minor
hold off



function f = differential1(t,T);
f=0.25*(85-10*cos(pi*(t-5)/12)-T)+2*(77-T);
end
function f = differential2(t,T);
f=0.25*(85-10*cos(pi*(t-5)/12)-T)+0.5*(77-T);
end
```
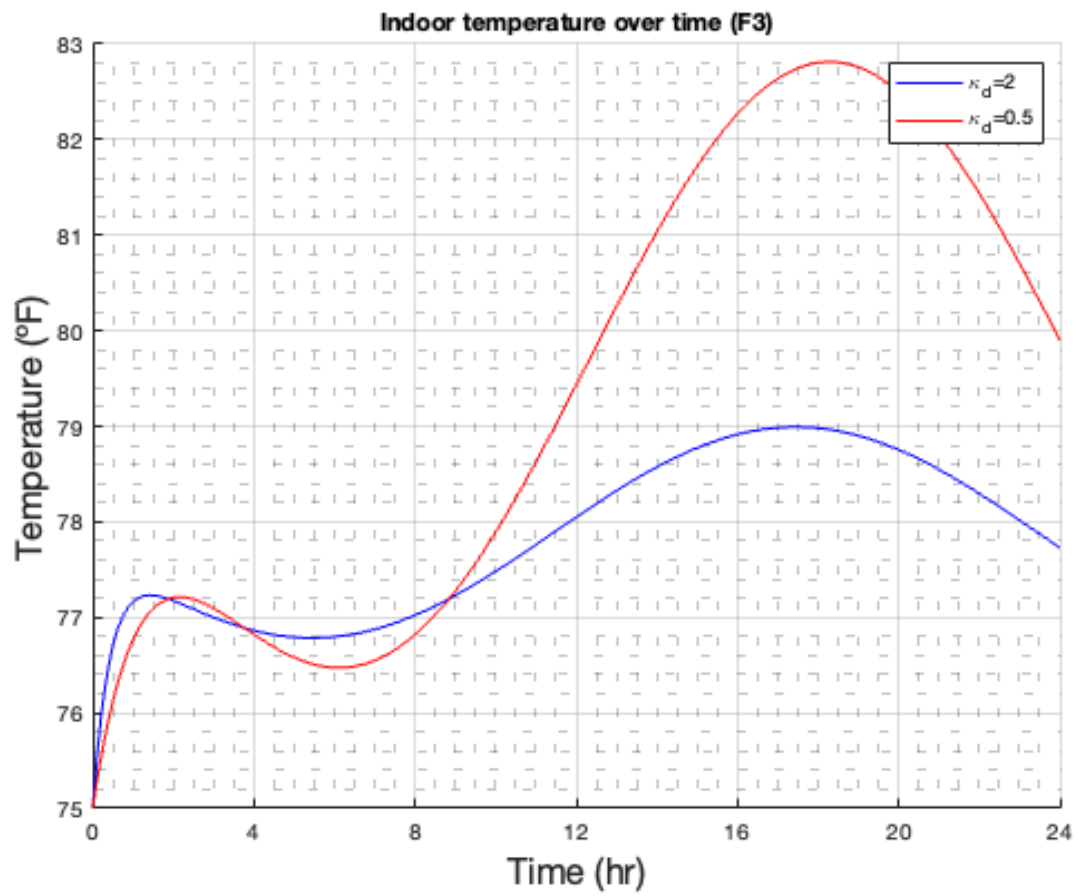
Indoor temperature over time (F3)

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