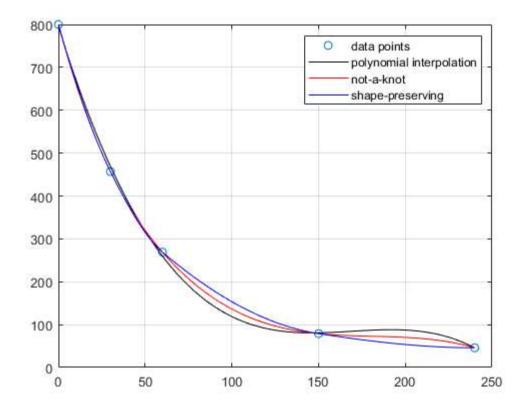```
clear

clc

time=[0 30 60 150 240];

Temp=[800 457 269 79 46];

plot(time,Temp,'o')

hold on

Ntime=0:1:240;

p=polyfit(time,Temp,3);
plot(Ntime,polyval(p,Ntime),'k')

grid on

plot(Ntime,spline(time,Temp,Ntime),'r')%not-a-knot

plot(Ntime,pchip(time,Temp,Ntime),'b')%shape preserving

legend('data points','polynomial interpolation','not-a-knot','shape-preserving')

fprintf('Temp after 3min is %.4f',spline(time,Temp,180))
```

Temp after 3min is 72.8395