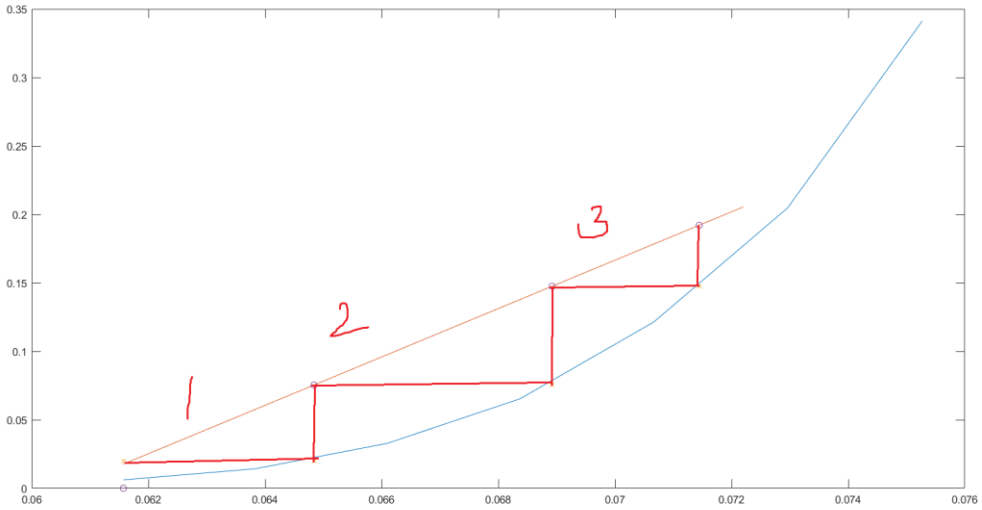
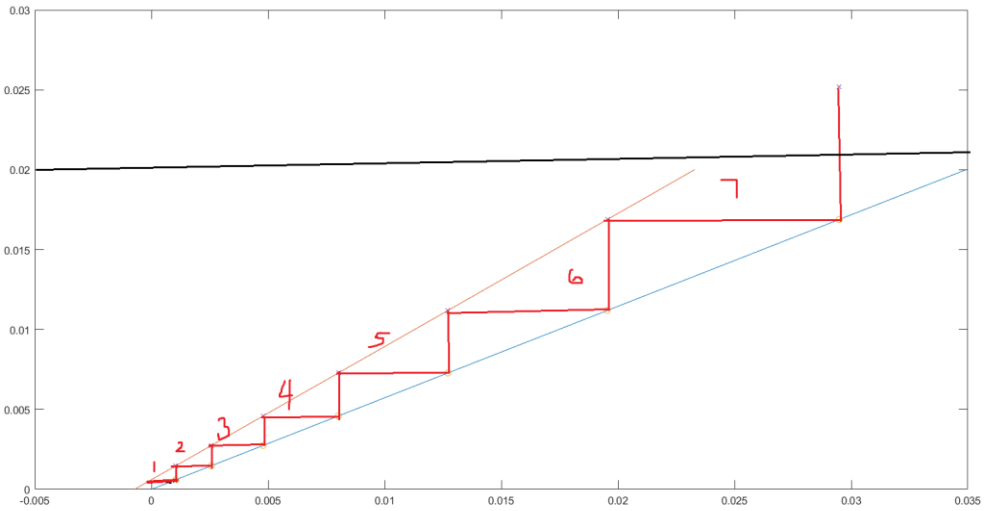
Question 1) Graph + Code




```
clear; close all;
X = [0.061571125 0.063829787 0.066098081 0.068376068 0.070663812 0.072961373 0.075268817 ];
Y = [0.006178288 0.014234875 0.032842582 0.065420561 0.121357433 0.204755614 0.341176471 ];
xl = 0.065:0.001:0.075;
yl = 0.1765.*ones(1,11);
xlol = linspace(0.06157,0.0722,10);
X_atminL = spline(Y,X,0.1765);
%determining number of trays
i = 0;
y = 0.02;
xcoords = zeros(1,4);
ycoords = zeros(1,4);
ycoords2 = ycoords;
while y <= 0.1765
   i = i + 1;
   x = spline(Y,X,y);
   xcoords(i) = x;
   ycoords(i) = y;
   y = 0.01765 + 1.2*14.722*(x-0.06157);
   ycoords2(i) = y;
end
xcoords(4)=0.06157;
ycoords(4) = 0.02;
plot(X,Y,xlol,0.01765 + 1.2*14.722.*(xlol-0.06157),xcoords,ycoords,'x',xcoords,ycoords2,'o');
a = [0.058 0.06 0.062 0.064 0.066 0.068 0.07 ];
b = [0.006140351 0.014035088 0.031798246 0.061403509 0.108223684 0.16995614 0.254385965 ];
figure();
plot(a,b);
```

Question 2: Graph + Code




```
close all;
Vs = 176.4;
Yentry = 0.02;
Yexit = 0.03*0.02;
Xentry = 0;
gamma = 6;
P = 110*10^3;
pvap = 10.5 * 10^3;
k = P/gamma/pvap;
X = @(Y)(k*Y);
Xexit = X(Yentry);
Lsmin = Vs*((Yentry-Yexit)/(Xexit));
Ls = 1.5*Lsmin;
m = Ls/Vs;
i = 0;
y = Yexit;
xcoords = zeros(1,3);
ycoords = zeros(1,3);
ycoords2 = ycoords;
while y <= Yentry
    i = i + 1;
    x = X(y);
    xcoords(i) = x;
    ycoords(i) = y;
    y = 0.03*0.02 + m*(x);
    ycoords2(i) = y;

end
ys = 0:0.0005:0.02;
xs = (ys - 0.03*0.02)/m;
plot(X(ys),ys,xs,ys,xcoords,ycoords,'o',xcoords,ycoords2,'x');
```