```
function [p] = NDD(x,y)

n = length(x);%define max iterations

C = zeros(n);%creating a zero matrix

C(:,1) = y';
for i = 2:n% we need to start at the second index because we have a
    % recursive call
    for j = i:n
        C(j,i) = (C(j,i-1)-C(j-1,i-1))/(x(j)-x(j-(i-1)));
    end
end

p = diag(C);% only return the diag
```