**% Name (first and last)**

**% CSC 2262**

**% cs2262xx**

**% Sample 9c**

**[xd yd] = textread('sample9a.dat');**

**n = length(xd);**

**for(k = 4 : n-3)**

**xd3 = [ xd(k-1) xd(k) xd(k+1) ];**

**yd3 = [ yd(k-1) yd(k) yd(k+1) ];**

**xd5 = [ xd(k-2) xd(k-1) xd(k) xd(k+1) xd(k+2) ];**

**yd5 = [ yd(k-2) yd(k-1) yd(k) yd(k+1) yd(k+2) ];**

**xd7=[xd(k-3) xd(k-2) xd(k-1) xd(k) xd(k+1) xd(k+2) xd(k+3)];**

**yd7=[yd(k-3) yd(k-2) yd(k-1) yd(k) yd(k+1) yd(k+2) yd(k+3)];**

**c2 = polyfit( xd3, yd3, 2 );**

**c4 = polyfit( xd5, yd5, 4 );**

**c6 = polyfit( xd7, yd7, 6 );**

**cder2 = polyder(c2);**

**der2 = polyval( cder2, xd(k) );**

**cder4 = polyder(c4);**

**der4 = polyval( cder4, xd(k) );**

**cder6 = polyder(c6);**

**der6 = polyval( cder6, xd(k) );**

**fprintf('x=%.1f der2=%.5f der4=%8.5f der6=%8.5f\n',...**

**xd(k), der2, der4, der6);**

**end**