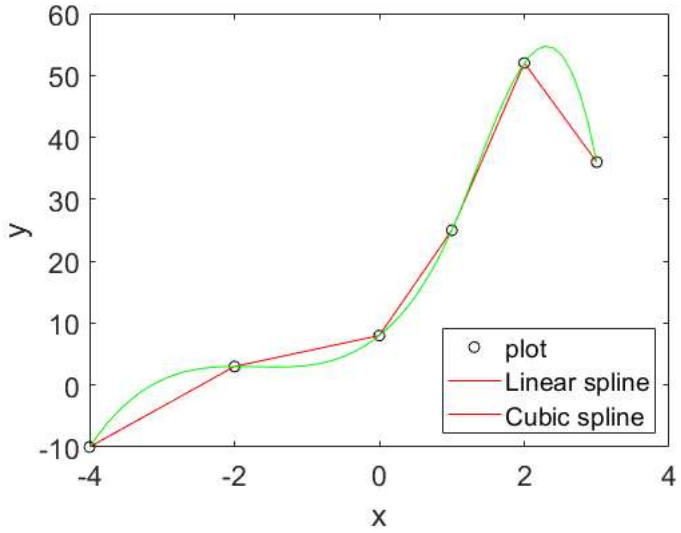
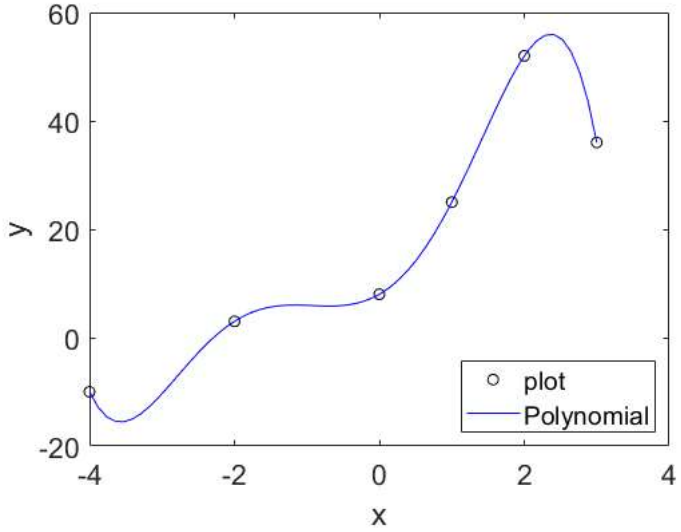
```
clear all; clc;

x = [-4 -2 0 1 2 3];
y = [-10 3 8 25 52 36];

figure(1)
plot(x,y,'ok')
xlabel('x');
ylabel('y');
set(gca,'fontsize',16);
hold on;


B=[x'.^5,x'.^4,x'.^3,x'.^2,x',ones(6,1)];
V=B\y';
yfit = B*V;
xf = linspace(-4,3,60);
ypnom = V(1).*xf.^5+V(2).*xf.^4+V(3).*xf.^3+V(4).*xf.^2+V(5).*xf+V(6);

fprintf('Equation of the polynomial are %5.3f %5s',V(1),'x^5 ',V(2),'x^4 +',V(3),'x^3 +',V(4),'x^2 +',V(5),'x +',V(6));


for i =1:length(x)-1
xs = linspace(x(i),x(i+1),10);
m = ( y(i+1)-y(i) )/( x(i+1)-x(i) );
ysplineA = m*(xs-x(i))+y(i);

plot(xs,ysplineA,'r-')
end


xx = linspace(-4,3,60);
ys3 = spline(x,y,xx);


hold on;
plot(xx,ys3,'g-')
legend({'plot','Linear spline','Cubic spline'},'location','southeast')


figure(2)
plot(x,y,'ok',xf,ypnom,'b')
xlabel('x');
ylabel('y');
set(gca,'fontsize',16);
legend({'plot','Polynomial'},'location','southeast')
```

```
Equation of the polynomial are -0.227  x^5 Equation of the polynomial are -0.868 x^4 +Equation of the polynomial are 2.043 x^3 +Equation of the polynomial are 8.346
```

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