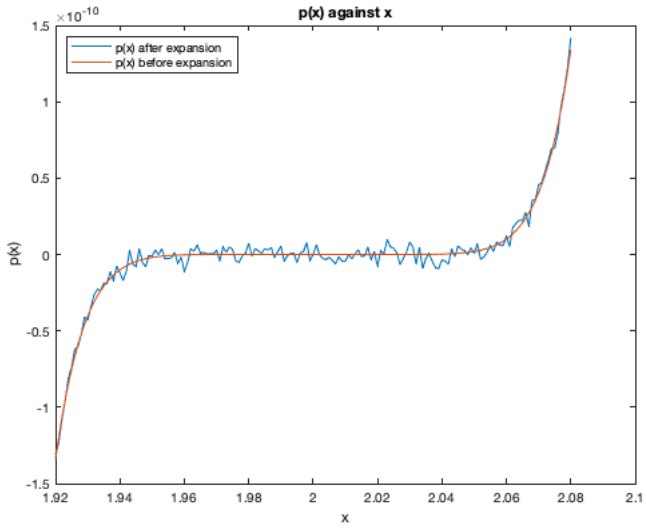
```
clear all;
close all;

p = @(x) (x - 2).^9;

x = [1.920:0.001:2.080]';

%coefficeints of p
coef = [1 -2]; p1 = coef;

%expanding p to obtain the coefficiets, p1.
for i =1:8
   p1 = conv(p1,coef);
end
p1;

%Evaluating P via coefficients.
P = polyval(p1,x);

%a).Plot p(x), evaluating p via its coeffients 1, -18, 144,...
plot(x,P);
hold on
xlabel('x'); ylabel('p(x)');

%b). Produce the same plot again, now evaluating p via the expression (x-2)^9
plot(x,p(x));
xlabel('x'); ylabel('p(x)');
legend('p(x) after expansion','p(x) before expansion','Location','northwest');
title('p(x) against x');

fprintf('According to the graph, its very bad to expand a polynomial, and evaluate it at different values of x, than evaluating it before expansion\n
```

```
According to the graph, its very bad to expand a polynomial, and evaluate it at different values of x, than evaluating it before expansion
 according to the noise displayed in the plot below for p(x) after expansion.
```



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