```
% This code provides an example of log-log plots
% which are implicit in sensitivity analysis.
%
syms x t;
N = 1000;
G = zeros(N,1);
Gprime = zeros(N,1);
T = zeros(N,1);
%
x = exp(t);
% We start with the following function f(x)
f = 7/(25*x) - 20;
% This function and its derivative will be plotted after a change of
% variables.  We introduct t = log(x) and g = log(f).
%
% To avoid developing a separate function program, an
% inline function is defined.  The 'char' part converts the
% defined function into a character string.

g = inline(char(log(f)));
% A paper computation gives the following formula for the derivative.
gprime = inline(char(-(7/25)*(1/x)*(1/f)));

% Matlab prefers point plots, so we generate three arrays.
% The array T consists of the first coordinate sample values.
% The arrays G and Gprime are the function and derivative samples.
% Notice that the samples u run from log(.005) to log(.013), and there
% are N samples.
for n = 1:N
 u = log(.005) + n*(log(.013)-log(.005))/N;
 G(n) = g(u);
 Gprime(n) = gprime(u);
 T(n) = u;
end

% To generate two graphs in the same figure we use the 'hold on' command.
plot(T,G,'k-');
hold on;
plot(T,Gprime,'k--');
legend('g','g derivative');
title('Sensitivity using log-log scaling');
xlabel('log of rate of change of price');
ylabel('log of time of sale');
hold off;
```