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% FILE e208b.m begins.
% Vaihtoehtoinen ratkaisu: Huomaa erityisesti diaryn kaytto
% modified 26.8.2002, USES: f208.m
% Huomaa: ei toimi versiossa 6.5.0
x=-3: 0.03: 5; info=[];
for j=1:5
    txt = ['y = (x-' num2str(j) ').*sin(x.^' num2str(j) '];
    delete f208.m
    diary f208.m
    disp(['function y = f208(x);']);
    disp(['[m,n]=size(x); one=ones(m,n);']);
    disp(['y = (x-' num2str(j) ')*one).*sin(x.^' num2str(j) ');']);
    diary off;
    type f208.m
    pause
    tmp=feval('f208',0.5)
    xmin=fminbnd('f208',-3,5);
    ymin= f208(xmin);
    info=[info; [j xmin ymin]]; % ";" <=> aloita uusi rivi
    txt = [txt ' ) ymin = ' num2str(ymin) ' (FMINBND)'];
    x=-3: 0.03: 5;
    y = feval('f208',x);
    plot(x,y,xmin,ymin,'k*'), title(txt); grid on
    xlabel(['at x = ' num2str(xmin) ' (E208B)']), pause,
    clear f208
end;
% FILE e208b.m ends.

% FILE e208c.m begins.
myf=inline( '(x-j).*sin(x.^j)', 'x', 'j');
for j=1:5
    clf; x=-3: 0.03: 5; y = myf(x,j);
    [ymin, imin] = min(y);
    txt = ['y = (x-' num2str(j) ').*sin(x.^' num2str(j) '];
    txt = [txt '); ymin = ' num2str(ymin) '];
    axes('FontSize',[15],'FontWeight','bold'); hold on;
    plt1=plot(x,y,x(imin),ymin,'k. ');
    title(txt,'FontSize',[15]);
    xlabel(['at x = ' num2str(x(imin)) ' (E208)'], ...
        'FontSize',[15] );
    set(plt1,'LineWidth', 2.5); % Line width is changed
    hold off;
    pause;
end;
% FILE e208c.m ends.

% FILE e208d.m begins.
% Vaihtoehtoinen ratkaisu: Huomaa erityisesti inline
% 20.9.2005

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close all; x=-3: 0.03: 5; figure
axes('FontSize',[18],'FontWeight','bold');
info=[];
myf=inline( '(x-j).*sin(x.^j)','x','j');
for j=1:5
    txt = ['y = (x-' num2str(j) ').*sin(x.^' num2str(j) '];
    xmin=fminbnd(myf,-3,5,[],j); % HUOM. [] tarpeen
    ymin= myf(xmin,j);
    info=[info; [j xmin ymin]]; % ";" <=> aloita uusi rivi
    txt = [txt ' ) ymin = ' num2str(ymin) ' (FMINBND)'];
    y = myf(x,j);
    plot(x,y,'LineWidth',3); hold on;
    plot(xmin,ymin,'k.','MarkerSize',35); hold off
    title(txt,'FontSize',18, 'FontWeight','bold')
    xlabel(['at x = ' num2str(xmin) ' (E208D)'],...
        'FontSize',18, 'FontWeight','bold');
    grid on, pause(2.5);
end;
fprintf('      j      xmin      ymin      \n')
disp(info)
% FILE 208d.m ends.

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% FILE e208e.m begins.

% Vaihtoehtoinen ratkaisu: Huomaa erityisesti inline

% 17.9.2008

function w=e208e

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close all; x=-3: 0.03: 5; figure
axes('FontSize',[18],'FontWeight','bold');
info=[];
myf=inline( '(x-j).*sin(x.^j)','x','j');
for j=1:5
    txt = ['y = (x-' num2str(j) ').*sin(x.^' num2str(j) '];
    xmin=fminbnd(@myf2,-3,5,[],j); % HUOM. [] tarpeen
    ymin= myf(xmin,j);
    info=[info; [j xmin ymin]]; % ";" <=> aloita uusi rivi
    txt = [txt ' ) ymin = ' num2str(ymin) ' (FMINBND)'];
    y = myf(x,j);
    plot(x,y,'LineWidth',3); hold on;
    plot(xmin,ymin,'k.','MarkerSize',35); hold off
    title(txt,'FontSize',18, 'FontWeight','bold')
    xlabel(['at x = ' num2str(xmin) ' (E208E)'],...
        'FontSize',18, 'FontWeight','bold');
    grid on, pause(2.5);
end;
fprintf('      j      xmin      ymin      \n')
disp(info)
function y=myf2(x,j)
    y= (x-j).*sin(x.^j);
% FILE e208e.m ends.

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