
Ex. 3.8

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```
clear all, close all

k1 = 0.12;
k2 = 0.22;
at = 0.6;
bt = 1.0;

tol = 1e-12;

hnorm = inf;
x = [at/2 bt/2]';
iter = 1;

while hnorm>tol && iter<100

    % eval. F.
    F = [x(1)+k1*x(1)*x(2)+k2*x(1)*x(2)^2-at;
         x(2)+k1*x(1)*x(2)+2*k2*x(1)*x(2)^2-bt];

    %eval J
    J = [1+k1*x(2)+k2*x(2)^2 x(1)*k1+2*k2*x(1)*x(2);
         x(2)*k1+2*k2*x(2)^2 1+k1*x(1)+4*k2*x(1)*x(2)];

    % korrektionen
    h = J\F;

    x = x-h;
    hnorm = norm(h,2);
    iter = iter+1;
end

% kolla att allt OK
a = x(1)
b = x(2)
iter
F = [a+k1*a*b+k2*a*b^2-at;
     b+k1*a*b+2*k2*a*b^2-bt]

a =
    0.482780357556346
b =
    0.812639905191861
iter =
    6
F =
    1.0e-15 *
    -0.222044604925031
    -0.111022302462516
```

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