
```

function Assignment_2_5
m=1; % initial guess 1
n=2; % initial guess 2
N = 1000; % maximum iteration times
eps = 10^-6; % tolerance

for i = 1:1:N
    p = myfun(m);
    q = myfun(n);
    delta = -q*(n-m)/(q-p); % I use Secant methods.
    m = n;
    n = n + delta;
    if abs(n-m)<eps % stop iteration when |x(k)-x(k-1)|<eps
        break;
    end
end
if i == N
    disp('Fail: reaching maximum iteration times');
else
    sprintf('When h = %g, velocity requirements is satisfied.',n)
end
end

```

```

function F = myfun(x)
V = 5; % m/s
t = 3; % s
L = 5; % m
g = 9.81; %m/s^2
F = V/(2*g*x)^0.5-tanh(t*(2*g*x)^0.5/2/L);
end

```

ans =

When h = 1.48958, velocity requirements is satisfied.

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