HW #10

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10a)

```
w = -1;
j = 0;
for t = 1.05:0.05:2
    w = w + 0.05*(1/(1 + 0.05*j)^2 - w./(1 + 0.05*j) - w^2 + 0.025*(-3/(1+0.05*j)^
    A(j+1,1) = j+1;
    A(j+1,2) = t;
    A(j+1,3) = w;
    A(j+1,4) = -1/t;
    A(j+1,5) = abs(A(j+1,3) - A(j+1, 4));
    j = j + 1;
end
T = array2table(A, 'VariableNames',{'i' 't_i' 'w_i', 'exact_val', 'error'})
```

```
        T =

        i      t_i       w_i        exact_val       error

       ___    ____    _____     _____     _____

        1     1.05     -0.9525      -0.95238      0.00011905
        2     1.1     -0.90931      -0.90909      0.00022288
        3     1.15    -0.86988      -0.86957      0.00031468
        4     1.2     -0.83373      -0.83333      0.00039686
        5     1.25    -0.80047         -0.8       0.00047127
        6     1.3     -0.76977      -0.76923      0.00053937
        7     1.35    -0.74134      -0.74074      0.00060227
        8     1.4     -0.71495      -0.71429      0.00066089
        9     1.45    -0.69037      -0.68966      0.00071593
       10     1.5     -0.66743      -0.66667      0.00076798
       11     1.55    -0.64598      -0.64516       0.0008175
       12     1.6     -0.62586        -0.625      0.00086489
       13     1.65    -0.60697      -0.60606      0.00091045
       14     1.7     -0.58919      -0.58824      0.00095445
       15     1.75    -0.57243      -0.57143      0.00099711
       16     1.8     -0.55659      -0.55556       0.0010386
       17     1.85    -0.54162      -0.54054       0.0010791
       18     1.9     -0.52743      -0.52632       0.0011187
       19     1.95    -0.51398      -0.51282       0.0011576
       20      2       -0.5012         -0.5        0.0011957
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1