**EKPAH STEPHEN UNEKWUOJO**

**17/ENG01/010**

**CHEMICAL ENGINEERING**

**ASSIGNMENT 1**

commandwindow

clear

clc

format short g

v = 0.5

v = sqrt((((34.3 + (0.02\*v))\*((log(v))^3)) + (10\*v) + 17150)/0.3)

v = sqrt((((34.3 + (0.02\*v))\*((log(v))^3)) + (10\*v) + 17150)/0.3)

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v = sqrt((((34.3 + (0.02\*v))\*((log(v))^3)) + (10\*v) + 17150)/0.3)

v = sqrt((((34.3 + (0.02\*v))\*((log(v))^3)) + (10\*v) + 17150)/0.3)

v =

0.5

v =

239.05

v =

294.17

v =

302.61

v =

303.85

v =

304.04

v =

304.06

v =

304.07

v =

304.07

v =

304.07

v =

304.07

v =

304.07

for i = 1:inf

iter(i+1) = i

v(i+1) = sqrt((((34.3 + (0.02\*v(i)))\*(log(v(i)))^3) + (10\*v(i)) + 17150)/0.3)

Ea(i+1)=abs(((v(i+1)-v(i))/v(i+1))\*100)

if Ea(i+1) <= 1E-11

break

end

end

iter'

v'

Ea'

tablo = table(iter',v',Ea')

iter =

0 1

v =

0.5 239.05

Ea =

0 99.791

iter =

0 1 2

v =

0.5 239.05 294.17

Ea =

0 99.791 18.736

iter =

0 1 2 3

v =

0.5 239.05 294.17 302.61

Ea =

0 99.791 18.736 2.7894

iter =

0 1 2 3 4

v =

0.5 239.05 294.17 302.61 303.85

Ea =

0 99.791 18.736 2.7894 0.40992

iter =

0 1 2 3 4 5

v =

0.5 239.05 294.17 302.61 303.85 304.04

Ea =

0 99.791 18.736 2.7894 0.40992 0.060144

iter =

0 1 2 3 4 5 6

v =

0.5 239.05 294.17 302.61 303.85 304.04 304.06

Ea =

0 99.791 18.736 2.7894 0.40992 0.060144 0.0088222

iter =

0 1 2 3 4 5 6 7

v =

0.5 239.05 294.17 302.61 303.85 304.04 304.06 304.07

Ea =

0 99.791 18.736 2.7894 0.40992 0.060144 0.0088222 0.0012941

iter =

0 1 2 3 4 5 6 7 8

v =

0.5 239.05 294.17 302.61 303.85 304.04 304.06 304.07 304.07

Ea =

0 99.791 18.736 2.7894 0.40992 0.060144 0.0088222 0.0012941 0.00018981

iter =

0 1 2 3 4 5 6 7 8 9

v =

0.5 239.05 294.17 302.61 303.85 304.04 304.06 304.07 304.07 304.07

Ea =

0 99.791 18.736 2.7894 0.40992 0.060144 0.0088222 0.0012941 0.00018981 2.7842e-05

iter =

0 1 2 3 4 5 6 7 8 9 10

v =

Columns 1 through 10

0.5 239.05 294.17 302.61 303.85 304.04 304.06 304.07 304.07 304.07

Column 11

304.07

Ea =

Columns 1 through 10

0 99.791 18.736 2.7894 0.40992 0.060144 0.0088222 0.0012941 0.00018981 2.7842e-05

Column 11

4.0838e-06

iter =

0 1 2 3 4 5 6 7 8 9 10 11

v =

Columns 1 through 10

0.5 239.05 294.17 302.61 303.85 304.04 304.06 304.07 304.07 304.07

Columns 11 through 12

304.07 304.07

Ea =

Columns 1 through 10

0 99.791 18.736 2.7894 0.40992 0.060144 0.0088222 0.0012941 0.00018981 2.7842e-05

Columns 11 through 12

4.0838e-06 5.9902e-07

iter =

0 1 2 3 4 5 6 7 8 9 10 11 12

v =

Columns 1 through 10

0.5 239.05 294.17 302.61 303.85 304.04 304.06 304.07 304.07 304.07

Columns 11 through 13

304.07 304.07 304.07

Ea =

Columns 1 through 10

0 99.791 18.736 2.7894 0.40992 0.060144 0.0088222 0.0012941 0.00018981 2.7842e-05

Columns 11 through 13

4.0838e-06 5.9902e-07 8.7865e-08

iter =

0 1 2 3 4 5 6 7 8 9 10 11 12 13

v =

Columns 1 through 10

0.5 239.05 294.17 302.61 303.85 304.04 304.06 304.07 304.07 304.07

Columns 11 through 14

304.07 304.07 304.07 304.07

Ea =

Columns 1 through 10

0 99.791 18.736 2.7894 0.40992 0.060144 0.0088222 0.0012941 0.00018981 2.7842e-05

Columns 11 through 14

4.0838e-06 5.9902e-07 8.7865e-08 1.2888e-08

iter =

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

v =

Columns 1 through 10

0.5 239.05 294.17 302.61 303.85 304.04 304.06 304.07 304.07 304.07

Columns 11 through 15

304.07 304.07 304.07 304.07 304.07

Ea =

Columns 1 through 10

0 99.791 18.736 2.7894 0.40992 0.060144 0.0088222 0.0012941 0.00018981 2.7842e-05

Columns 11 through 15

4.0838e-06 5.9902e-07 8.7865e-08 1.2888e-08 1.8904e-09

iter =

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

v =

Columns 1 through 10

0.5 239.05 294.17 302.61 303.85 304.04 304.06 304.07 304.07 304.07

Columns 11 through 16

304.07 304.07 304.07 304.07 304.07 304.07

Ea =

Columns 1 through 10

0 99.791 18.736 2.7894 0.40992 0.060144 0.0088222 0.0012941 0.00018981 2.7842e-05

Columns 11 through 16

4.0838e-06 5.9902e-07 8.7865e-08 1.2888e-08 1.8904e-09 2.7729e-10

iter =

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

v =

Columns 1 through 10

0.5 239.05 294.17 302.61 303.85 304.04 304.06 304.07 304.07 304.07

Columns 11 through 17

304.07 304.07 304.07 304.07 304.07 304.07 304.07

Ea =

Columns 1 through 10

0 99.791 18.736 2.7894 0.40992 0.060144 0.0088222 0.0012941 0.00018981 2.7842e-05

Columns 11 through 17

4.0838e-06 5.9902e-07 8.7865e-08 1.2888e-08 1.8904e-09 2.7729e-10 4.066e-11

iter =

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

v =

Columns 1 through 10

0.5 239.05 294.17 302.61 303.85 304.04 304.06 304.07 304.07 304.07

Columns 11 through 18

304.07 304.07 304.07 304.07 304.07 304.07 304.07 304.07

Ea =

Columns 1 through 10

0 99.791 18.736 2.7894 0.40992 0.060144 0.0088222 0.0012941 0.00018981 2.7842e-05

Columns 11 through 18

4.0838e-06 5.9902e-07 8.7865e-08 1.2888e-08 1.8904e-09 2.7729e-10 4.066e-11 5.9822e-12

ans =

0

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

ans =

0.5

239.05

294.17

302.61

303.85

304.04

304.06

304.07

304.07

304.07

304.07

304.07

304.07

304.07

304.07

304.07

304.07

304.07

ans =

0

99.791

18.736

2.7894

0.40992

0.060144

0.0088222

0.0012941

0.00018981

2.7842e-05

4.0838e-06

5.9902e-07

8.7865e-08

1.2888e-08

1.8904e-09

2.7729e-10

4.066e-11

5.9822e-12

tablo =

18×3 table

Var1 Var2 Var3

\_\_\_\_ \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_

0 0.5 0

1 239.05 99.791

2 294.17 18.736

3 302.61 2.7894

4 303.85 0.40992

5 304.04 0.060144

6 304.06 0.0088222

7 304.07 0.0012941

8 304.07 0.00018981

9 304.07 2.7842e-05

10 304.07 4.0838e-06

11 304.07 5.9902e-07

12 304.07 8.7865e-08

13 304.07 1.2888e-08

14 304.07 1.8904e-09

15 304.07 2.7729e-10

16 304.07 4.066e-11

17 304.07 5.9822e-12