**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)

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