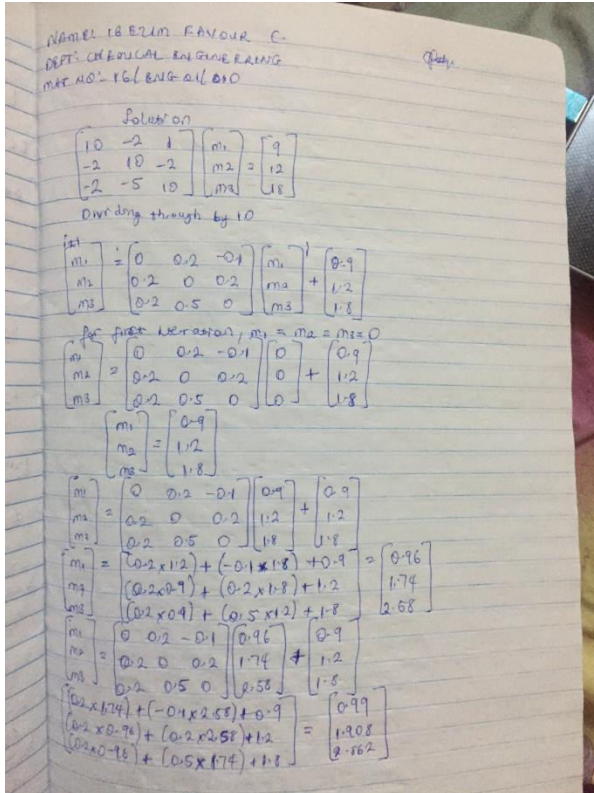


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 MAT NO: 16/ENG01/010  
 DEPT: CHEMICAL ENGINEERING



```

commandwindow
clear
clc
format short g
syms m1 m2 m3
A = [10 -2 1
     -2 10 -2
     -2 -5 10]
x = [m1;m2;m3]
B = [9;12;18]
C = [ 0 -A(1,2)/A(1,1) -A(1,3)/A(1,1)
     -A(2,1)/A(2,2) 0 -A(2,3)/A(2,2)
     -A(3,1)/A(3,3) -A(3,2)/A(3,3) 0]
D = [B(1,1)/A(1,1); B(2,1)/A(2,2); B(3,1)/A(3,3)]
x = [0;0;0]

for i=1:inf
normB = norm(x)
x = (C*x)+D
normA =norm(x)
error = abs(normA -normB)

```

```
        if error<=1E-15
            break
        end
    end
    end
    i'
    x'
    error'
    tableau =[i', x', error']
%
```

A =

```
10 -2  1
-2 10 -2
-2 -5 10
```

x =

```
m1
m2
m3
```

B =

```
9
12
18
```

C =

```
0    0.2  -0.1
0.2   0    0.2
0.2   0.5   0
```

D =

```
0.9
1.2
1.8
```

x =

```
0
0
0
```

Warning: Too many FOR loop iterations. Stopping after 9223372036854775806 iterations.

> In Jacobi\_assignment (line 17)

normB =

```
0
```

x =

0.9

1.2

1.8

normA =

2.3431

error =

2.3431

normB =

2.3431

x =

0.96

1.74

2.58

normA =

3.2566

error =

0.91355

normB =

3.2566

x =

0.99

1.908

2.862

normA =

3.5793

error =

0.32271

normB =

3.5793

x =

0.9954

1.9704

2.952

normA =

3.6861

error =

0.10681

normB =

3.6861

x =

0.99888

1.9895

2.9843

normA =

3.7231

error =

0.036997

normB =

3.7231

x =

0.99947

1.9966

2.9945

normA =

3.7353

error =

0.012185

normB =

3.7353

x =

0.99987

1.9988

2.9982

normA =

3.7395

error =

0.0042271



normB =

3.7395

x =

0.99994

1.9996

2.9994

normA =

3.7409

error =

0.0013884

normB =

3.7409

x =

0.99999

1.9999

2.9998

normA =

3.7414

error =

0.0004829

normB =

3.7414

x =

0.99999

2

2.9999

normA =

3.7416

error =

0.00015816

normB =

3.7416

x =

1

2

3

normA =

3.7416

error =

5.5172e-05

normB =

3.7416

x =

1

2

3

normA =

3.7416

error =

1.8013e-05

normB =

3.7416

x =

1

2

3

normA =

3.7417

error =

6.3043e-06

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

2.0512e-06

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

7.2049e-07

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

2.3354e-07

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

8.2356e-08

normB =

3.7417

x =

1

2

3



normA =

3.7417

error =

2.6584e-08

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

9.4157e-09

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

3.0253e-09

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

1.0767e-09

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

3.4421e-10

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

1.2315e-10

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

3.9152e-11

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

1.409e-11

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

4.4516e-12

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

1.6125e-12

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

5.0626e-13



normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

1.843e-13

normB =

3.7417

x =

- 1
- 2
- 3

normA =

3.7417

error =

5.7732e-14

normB =

3.7417

x =

- 1
- 2
- 3

normA =

3.7417

error =

2.176e-14

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

5.7732e-15

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

2.2204e-15

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

8.8818e-16

ans =

34

ans =

1 2 3

ans =

8.8818e-16

```
tableau =
```

```
      34      1      2      3 8.8818e-16
```

```
>>
```