The comparison summary is listed below,

Comparison of the finite element solutions $u(0, y)$ with the series solution and the Ritz solution.

	Triangular elem.		Rectangular elem.		Ritz solution	Series solution
y	8	32	4	16		
0.00	0.3125	0.3013	0.3107	0.2984	0.3125	0.2947
0.25	0.2708*	0.2805	0.2759*	0.2824	0.2930	0.2789
0.50	0.2292	0.2292	0.2411	0.2322	0.2344	0.2293
0.75	0.1146*	0.1393	0.1205*	0.1414	0.1367	0.1397
1.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* Interpolated value

The results match well with the hand calculation solution. And the finite element solution obtained by 32 triangular elements is the most accurate when compared to the series solution.

1. With 8 triangular elements

input data and output:

```
   *** ECHO OF THE INPUT DATA STARTS ***
Hw-7-1:  Solution of the Poisson equation (mesh of triangles)
  0  1  0  0                  ITYPE,IGRAD,ITEM,NEIGN
  0  3  1  0                  IELTYP,NPE,MESH,NPRNT
  2  2                       NX, NY
  0.0  0.5  0.5                 X0, DX(I)
  0.0  0.5  0.5                 Y0, DY(I)
  5                       NSPV
  3 1  6 1  7 1  8 1  9 1       ISPV(I,J)
  0.0  0.0  0.0  0.0  0.0       VSPV(I)
  0                       NSSV
  1.0  0.0  0.0                 A10, A1X, A1Y
  1.0  0.0  0.0                 A20, A2X, A2Y
  0.0                     A00
  0                       ICONV
  1.0  0.0  0.0                 F0,  FX,  FY
   **** ECHO OF THE INPUT DATA ENDS ****

Hw-7-1:  Solution of the Poisson equation (mesh of triangles)
 ____________________________________________________________

       OUTPUT  from  program *** FEM2D *** by J. N. REDDY
 ____________________________________________________________
          ANALYSIS  OF   A  POISSON/LAPLACE  EQUATION

   COEFFICIENTS OF THE DIFFERENTIAL EQUATION:

     Coefficient, A10 .....................= 0.1000E+01
     Coefficient, A1X .....................= 0.0000E+00
     Coefficient, A1Y .....................= 0.0000E+00
     Coefficient, A20 .....................= 0.1000E+01
     Coefficient, A2X .....................= 0.0000E+00
     Coefficient, A2Y .....................= 0.0000E+00
     Coefficient, A00 .....................= 0.0000E+00

   CONTINUOUS SOURCE COEFFICIENTS:

     Coefficient, F0 ......................= 0.1000E+01
     Coefficient, FX ......................= 0.0000E+00
```

Coefficient, FY .....= 0.0000E+00

******* A STEADY-STATE PROBLEM is analyzed *******
*** A mesh of TRIANGLES is chosen by user ***

FINITE ELEMENT MESH INFORMATION:

Element type: 0 = Triangle; >0 = Quad.)..= 0
Number of nodes per element, NPE .....= 3
No. of primary deg. of freedom/node, NDF = 1
Number of elements in the mesh, NEM .....= 8
Number of nodes in the mesh, NNM .....= 9
Number of equations to be solved, NEQ ...= 9
Half bandwidth of the matrix GLK, NHBW ..= 5
Mesh subdivisions, NX and NY .....= 2 2

No. of specified PRIMARY variables, NSPV = 5

Node	x-coord.	y-coord.	Speci. primary & secondary variables (0, unspecified; >0, specified) Primary DOF	Secondary DOF
1	0.0000E+00	0.0000E+00	0	0
2	0.5000E+00	0.0000E+00	0	0
3	0.1000E+01	0.0000E+00	1	0
4	0.0000E+00	0.5000E+00	0	0
5	0.5000E+00	0.5000E+00	0	0
6	0.1000E+01	0.5000E+00	1	0
7	0.0000E+00	0.1000E+01	1	0
8	0.5000E+00	0.1000E+01	1	0
9	0.1000E+01	0.1000E+01	1	0

NUMERICAL INTEGRATION DATA:

Full Integration polynomial degree, IPDF = 3
Number of full integration points, NIPF = 4
Reduced Integration polynomial deg.,IPDR = 1
No. of reduced integration points, NIPR = 1
Integ. poly. deg. for stress comp., ISTR = 1
No. of integ. pts. for stress comp.,NSTR = 1

S O L U T I O N :

Node	x-coord.	y-coord.	Primary DOF
1	0.00000E+00	0.00000E+00	0.31250E+00
2	0.50000E+00	0.00000E+00	0.22917E+00
3	0.10000E+01	0.00000E+00	0.00000E+00
4	0.00000E+00	0.50000E+00	0.22917E+00
5	0.50000E+00	0.50000E+00	0.17708E+00
6	0.10000E+01	0.50000E+00	0.00000E+00
7	0.00000E+00	0.10000E+01	0.00000E+00
8	0.50000E+00	0.10000E+01	0.00000E+00
9	0.10000E+01	0.10000E+01	0.00000E+00

The orientation of gradient vector is measured from the positive x-axis

x-coord.	y-coord.	-a11(du/dx)	-a22(du/dy)	Flux Mgntd	Orientation
0.3333E+00	0.1667E+00	0.1667E+00	0.1042E+00	0.1965E+00	32.01
0.1667E+00	0.3333E+00	0.1042E+00	0.1667E+00	0.1965E+00	57.99
0.8333E+00	0.1667E+00	0.4583E+00	0.0000E+00	0.4583E+00	0.00
0.6667E+00	0.3333E+00	0.3542E+00	0.1042E+00	0.3692E+00	16.39

```
 0.3333E+00  0.6667E+00  0.1042E+00  0.3542E+00  0.3692E+00    73.61
 0.1667E+00  0.8333E+00  0.0000E+00  0.4583E+00  0.4583E+00    90.00
 0.8333E+00  0.6667E+00  0.3542E+00  0.0000E+00  0.3542E+00     0.00
 0.6667E+00  0.8333E+00  0.0000E+00  0.3542E+00  0.3542E+00    90.00
 ____________________________________________________________________________
Stop - Program terminated.
```

2. With 4 rectangular elements

Input data and output:

```
   *** ECHO OF THE INPUT DATA STARTS ***
Hw-7-2:  Solution of the Poisson equation (mesh of rectangles)
  0  1  0  0                  ITYPE,IGRAD,ITEM,NEIGN
  1  4  1  0                  IELTYP,NPE,MESH,NPRNT
  2  2                       NX, NY
  0.0  0.5  0.5                 X0, DX(I)
  0.0  0.5  0.5                 Y0, DY(I)
  5                         NSPV
  3 1  6 1  7 1  8 1  9 1       ISPV(I,J)
  0.0  0.0  0.0  0.0  0.0       VSPV(I)
  0                         NSSV
  1.0  0.0  0.0                 A10, A1X, A1Y
  1.0  0.0  0.0                 A20, A2X, A2Y
  0.0                        A00
  0                         ICONV
  1.0  0.0  0.0                 F0,  FX,  FY
   **** ECHO OF THE INPUT DATA ENDS ****

Hw-7-2:  Solution of the Poisson equation (mesh of rectangles)
 ____________________________________________________________________________
       OUTPUT  from  program *** FEM2D *** by J. N. REDDY
 ____________________________________________________________________________
          ANALYSIS  OF   A  POISSON/LAPLACE  EQUATION

   COEFFICIENTS OF THE DIFFERENTIAL EQUATION:

     Coefficient, A10 .....................=  0.1000E+01
     Coefficient, A1X .....................=  0.0000E+00
     Coefficient, A1Y .....................=  0.0000E+00
     Coefficient, A20 .....................=  0.1000E+01
     Coefficient, A2X .....................=  0.0000E+00
     Coefficient, A2Y .....................=  0.0000E+00
     Coefficient, A00 .....................=  0.0000E+00

   CONTINUOUS SOURCE COEFFICIENTS:

     Coefficient, F0  .....................=  0.1000E+01
     Coefficient, FX  .....................=  0.0000E+00
     Coefficient, FY  .....................=  0.0000E+00


     ******* A STEADY-STATE PROBLEM is analyzed *******
     *** A mesh of QUADRILATERALS is chosen by user ***

   FINITE ELEMENT MESH INFORMATION:

     Element type: 0 = Triangle; >0 = Quad.)..=   1
     Number of nodes per element, NPE .....=   4
     No. of primary deg. of freedom/node, NDF =   1
     Number of elements in the mesh, NEM .....=   4
     Number of nodes in the mesh, NNM .....=   9
     Number of equations to be solved, NEQ ...=   9
     Half bandwidth of the matrix GLK, NHBW ..=   5
```

```
 Mesh subdivisions, NX and NY .....=   2   2

 No. of specified PRIMARY variables, NSPV =   5
_____________________________________________________________________

 Node   x-coord.   y-coord.    Speci. primary & secondary variables
                              (0, unspecified; >0, specified)
                                Primary DOF  Secondary DOF
_____________________________________________________________________

   1  0.0000E+00  0.0000E+00          0          0
   2  0.5000E+00  0.0000E+00          0          0
   3  0.1000E+01  0.0000E+00          1          0
   4  0.0000E+00  0.5000E+00          0          0
   5  0.5000E+00  0.5000E+00          0          0
   6  0.1000E+01  0.5000E+00          1          0
   7  0.0000E+00  0.1000E+01          1          0
   8  0.5000E+00  0.1000E+01          1          0
   9  0.1000E+01  0.1000E+01          1          0
_____________________________________________________________________

 NUMERICAL INTEGRATION DATA:

   Full quadrature (IPDF x IPDF) rule, IPDF =   2
   Reduced quadrature (IPDR x IPDR),   IPDR =   1
   Quadrature rule used in postproc.,  ISTR =   1

 S O L U T I O N :
_____________________________________________________________

 Node    x-coord.     y-coord.    Primary DOF
_____________________________________________________________

   1  0.00000E+00  0.00000E+00  0.31071E+00
   2  0.50000E+00  0.00000E+00  0.24107E+00
   3  0.10000E+01  0.00000E+00  0.00000E+00
   4  0.00000E+00  0.50000E+00  0.24107E+00
   5  0.50000E+00  0.50000E+00  0.19286E+00
   6  0.10000E+01  0.50000E+00  0.00000E+00
   7  0.00000E+00  0.10000E+01  0.00000E+00
   8  0.50000E+00  0.10000E+01  0.00000E+00
   9  0.10000E+01  0.10000E+01  0.00000E+00
_____________________________________________________________________

 The orientation of  gradient vector is measured from the positive x-axis

 x-coord.    y-coord.  -a11(du/dx)  -a22(du/dy)   Flux Mgntd  Orientation
_____________________________________________________________________

0.2500E+00  0.2500E+00  0.1179E+00  0.1179E+00  0.1667E+00    45.00
0.7500E+00  0.2500E+00  0.4339E+00  0.4821E-01  0.4366E+00     6.34
0.2500E+00  0.7500E+00  0.4821E-01  0.4339E+00  0.4366E+00    83.66
0.7500E+00  0.7500E+00  0.1929E+00  0.1929E+00  0.2727E+00    45.00
_____________________________________________________________________

Stop - Program terminated.
```

3. With 32 triangular elements

Input data and output:

```
   *** ECHO OF THE INPUT DATA STARTS ***
Hw-7-3:  Solution of the Poisson equation (mesh of 32 triangles)
  0  1  0  0                    ITYPE,IGRAD,ITEM,NEIGN
  0  3  1  0                    IELTYP,NPE,MESH,NPRNT
  4  4                          NX, NY
  0.0  0.25  0.25 0.25 0.25      X0, DX(I)
  0.0  0.25  0.25 0.25 0.25      Y0, DY(I)
  9                             NSPV
```

```
  5 1  10 1  15 1  20 1  21 1  22 1  23 1  24 1  25 1         ISPV(I,J)
  0.0  0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0         VSPV(I)
  0                              NSSV
  1.0   0.0  0.0                    A10, A1X, A1Y
  1.0   0.0  0.0                    A20, A2X, A2Y
  0.0                             A00
  0                              ICONV
  1.0   0.0  0.0                    F0,  FX,  FY
   **** ECHO OF THE INPUT DATA ENDS ****

Hw-7-3:  Solution of the Poisson equation (mesh of 32 triangles)
_____________________________________________________________________________

       OUTPUT  from  program *** FEM2D *** by J. N. REDDY
_____________________________________________________________________________

          ANALYSIS  OF   A  POISSON/LAPLACE  EQUATION

   COEFFICIENTS OF THE DIFFERENTIAL EQUATION:

     Coefficient, A10 .....................=  0.1000E+01
     Coefficient, A1X .....................=  0.0000E+00
     Coefficient, A1Y .....................=  0.0000E+00
     Coefficient, A20 .....................=  0.1000E+01
     Coefficient, A2X .....................=  0.0000E+00
     Coefficient, A2Y .....................=  0.0000E+00
     Coefficient, A00 .....................=  0.0000E+00

   CONTINUOUS SOURCE COEFFICIENTS:

     Coefficient, F0  .....................=  0.1000E+01
     Coefficient, FX  .....................=  0.0000E+00
     Coefficient, FY  .....................=  0.0000E+00

     ******* A STEADY-STATE PROBLEM is analyzed *******

     *** A mesh of   TRIANGLES    is chosen by user ***

   FINITE ELEMENT MESH INFORMATION:

     Element type: 0 = Triangle; >0 = Quad.)..=   0
     Number of nodes per element, NPE .....=   3
     No. of primary deg. of freedom/node, NDF =   1
     Number of elements in the mesh, NEM .....=  32
     Number of nodes in the mesh, NNM .....=  25
     Number of equations to be solved, NEQ ...=  25
     Half bandwidth of the matrix GLK, NHBW ..=   7
     Mesh subdivisions, NX and NY .....=   4   4

     No. of specified PRIMARY variables, NSPV =   9
_____________________________________________________________________________

   Node   x-coord.   y-coord.    Speci. primary & secondary variables
                                  (0, unspecified; >0, specified)
                                    Primary DOF  Secondary DOF
_____________________________________________________________________________
     1  0.0000E+00  0.0000E+00            0          0
     2  0.2500E+00  0.0000E+00            0          0
     3  0.5000E+00  0.0000E+00            0          0
     4  0.7500E+00  0.0000E+00            0          0
     5  0.1000E+01  0.0000E+00            1          0
     6  0.0000E+00  0.2500E+00            0          0
     7  0.2500E+00  0.2500E+00            0          0
     8  0.5000E+00  0.2500E+00            0          0
     9  0.7500E+00  0.2500E+00            0          0
    10  0.1000E+01  0.2500E+00            1          0
```

11	0.0000E+00	0.5000E+00	0	0
12	0.2500E+00	0.5000E+00	0	0
13	0.5000E+00	0.5000E+00	0	0
14	0.7500E+00	0.5000E+00	0	0
15	0.1000E+01	0.5000E+00	1	0
16	0.0000E+00	0.7500E+00	0	0
17	0.2500E+00	0.7500E+00	0	0
18	0.5000E+00	0.7500E+00	0	0
19	0.7500E+00	0.7500E+00	0	0
20	0.1000E+01	0.7500E+00	1	0
21	0.0000E+00	0.1000E+01	1	0
22	0.2500E+00	0.1000E+01	1	0
23	0.5000E+00	0.1000E+01	1	0
24	0.7500E+00	0.1000E+01	1	0
25	0.1000E+01	0.1000E+01	1	0

NUMERICAL INTEGRATION DATA:

Full Integration polynomial degree, IPDF = 3
Number of full integration points, NIPF = 4
Reduced Integration polynomial deg.,IPDR = 1
No. of reduced integration points, NIPR = 1
Integ. poly. deg. for stress comp., ISTR = 1
No. of integ. pts. for stress comp.,NSTR = 1

S O L U T I O N :

Node	x-coord.	y-coord.	Primary DOF
1	0.00000E+00	0.00000E+00	0.30132E+00
2	0.25000E+00	0.00000E+00	0.28048E+00
3	0.50000E+00	0.00000E+00	0.22917E+00
4	0.75000E+00	0.00000E+00	0.13925E+00
5	0.10000E+01	0.00000E+00	0.00000E+00
6	0.00000E+00	0.25000E+00	0.28048E+00
7	0.25000E+00	0.25000E+00	0.26448E+00
8	0.50000E+00	0.25000E+00	0.21722E+00
9	0.75000E+00	0.25000E+00	0.13266E+00
10	0.10000E+01	0.25000E+00	0.00000E+00
11	0.00000E+00	0.50000E+00	0.22917E+00
12	0.25000E+00	0.50000E+00	0.21722E+00
13	0.50000E+00	0.50000E+00	0.18007E+00
14	0.75000E+00	0.50000E+00	0.11167E+00
15	0.10000E+01	0.50000E+00	0.00000E+00
16	0.00000E+00	0.75000E+00	0.13925E+00
17	0.25000E+00	0.75000E+00	0.13266E+00
18	0.50000E+00	0.75000E+00	0.11167E+00
19	0.75000E+00	0.75000E+00	0.71461E-01
20	0.10000E+01	0.75000E+00	0.00000E+00
21	0.00000E+00	0.10000E+01	0.00000E+00
22	0.25000E+00	0.10000E+01	0.00000E+00
23	0.50000E+00	0.10000E+01	0.00000E+00
24	0.75000E+00	0.10000E+01	0.00000E+00
25	0.10000E+01	0.10000E+01	0.00000E+00

The orientation of gradient vector is measured fromthe positive x-axis

x-coord.	y-coord.	-a11(du/dx)	-a22(du/dy)	Flux Mgntd	Orientation
0.1667E+00	0.8333E-01	0.8333E-01	0.6403E-01	0.1051E+00	37.54
0.8333E-01	0.1667E+00	0.6403E-01	0.8333E-01	0.1051E+00	52.46

```
 0.4167E+00  0.8333E-01  0.2053E+00  0.4779E-01  0.2108E+00    13.11
 0.3333E+00  0.1667E+00  0.1890E+00  0.6403E-01  0.1996E+00    18.71
 0.6667E+00  0.8333E-01  0.3597E+00  0.2635E-01  0.3606E+00     4.19
 0.5833E+00  0.1667E+00  0.3382E+00  0.4779E-01  0.3416E+00     8.04
 0.9167E+00  0.8333E-01  0.5570E+00  0.0000E+00  0.5570E+00     0.00
 0.8333E+00  0.1667E+00  0.5306E+00  0.2635E-01  0.5313E+00     2.84
 0.1667E+00  0.3333E+00  0.6403E-01  0.1890E+00  0.1996E+00    71.29
 0.8333E-01  0.4167E+00  0.4779E-01  0.2053E+00  0.2108E+00    76.89
 0.4167E+00  0.3333E+00  0.1890E+00  0.1486E+00  0.2404E+00    38.17
 0.3333E+00  0.4167E+00  0.1486E+00  0.1890E+00  0.2404E+00    51.83
 0.6667E+00  0.3333E+00  0.3382E+00  0.8395E-01  0.3485E+00    13.94
 0.5833E+00  0.4167E+00  0.2736E+00  0.1486E+00  0.3113E+00    28.51
 0.9167E+00  0.3333E+00  0.5306E+00  0.0000E+00  0.5306E+00     0.00
 0.8333E+00  0.4167E+00  0.4467E+00  0.8395E-01  0.4545E+00    10.64
 0.1667E+00  0.5833E+00  0.4779E-01  0.3382E+00  0.3416E+00    81.96
 0.8333E-01  0.6667E+00  0.2635E-01  0.3597E+00  0.3606E+00    85.81
 0.4167E+00  0.5833E+00  0.1486E+00  0.2736E+00  0.3113E+00    61.49
 0.3333E+00  0.6667E+00  0.8395E-01  0.3382E+00  0.3485E+00    76.06
 0.6667E+00  0.5833E+00  0.2736E+00  0.1608E+00  0.3174E+00    30.45
 0.5833E+00  0.6667E+00  0.1608E+00  0.2736E+00  0.3174E+00    59.55
 0.9167E+00  0.5833E+00  0.4467E+00  0.0000E+00  0.4467E+00     0.00
 0.8333E+00  0.6667E+00  0.2858E+00  0.1608E+00  0.3280E+00    29.37
 0.1667E+00  0.8333E+00  0.2635E-01  0.5306E+00  0.5313E+00    87.16
 0.8333E-01  0.9167E+00  0.0000E+00  0.5570E+00  0.5570E+00    90.00
 0.4167E+00  0.8333E+00  0.8395E-01  0.4467E+00  0.4545E+00    79.36
 0.3333E+00  0.9167E+00  0.0000E+00  0.5306E+00  0.5306E+00    90.00
 0.6667E+00  0.8333E+00  0.1608E+00  0.2858E+00  0.3280E+00    60.63
 0.5833E+00  0.9167E+00  0.0000E+00  0.4467E+00  0.4467E+00    90.00
 0.9167E+00  0.8333E+00  0.2858E+00  0.0000E+00  0.2858E+00     0.00
 0.8333E+00  0.9167E+00  0.0000E+00  0.2858E+00  0.2858E+00    90.00
 ____________________________________________________________________________

Stop - Program terminated.
```

4. With 16 rectangular elements

Input data and output:

```
    *** ECHO OF THE INPUT DATA STARTS ***
Hw-7-3:  Solution of the Poisson equation (mesh of 16 rectangles)
  0  1  0  0                    ITYPE,IGRAD,ITEM,NEIGN
  1  4  1  0                    IELTYP,NPE,MESH,NPRNT
  4  4                          NX, NY
  0.0  0.25  0.25 0.25 0.25                  X0, DX(I)
  0.0  0.25  0.25 0.25 0.25                  Y0, DY(I)
  9                          NSPV
  5 1  10 1  15 1  20 1  21 1  22 1  23 1  24 1  25 1         ISPV(I,J)
  0.0  0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0        VSPV(I)
  0                          NSSV
  1.0   0.0  0.0                  A10, A1X, A1Y
  1.0   0.0  0.0                  A20, A2X, A2Y
  0.0                         A00
  0                          ICONV
  1.0   0.0  0.0                  F0,  FX,  FY
   **** ECHO OF THE INPUT DATA ENDS ****

Hw-7-3:  Solution of the Poisson equation (mesh of 16 rectangles)
 ____________________________________________________________________________

       OUTPUT  from  program *** FEM2D *** by J. N. REDDY
 ____________________________________________________________________________
          ANALYSIS  OF   A  POISSON/LAPLACE  EQUATION

   COEFFICIENTS OF THE DIFFERENTIAL EQUATION:
```

Coefficient, A10 .....= 0.1000E+01
Coefficient, A1X .....= 0.0000E+00
Coefficient, A1Y .....= 0.0000E+00
Coefficient, A20 .....= 0.1000E+01
Coefficient, A2X .....= 0.0000E+00
Coefficient, A2Y .....= 0.0000E+00
Coefficient, A00 .....= 0.0000E+00

CONTINUOUS SOURCE COEFFICIENTS:

Coefficient, F0 .....= 0.1000E+01
Coefficient, FX .....= 0.0000E+00
Coefficient, FY .....= 0.0000E+00

******* A STEADY-STATE PROBLEM is analyzed *******
*** A mesh of QUADRILATERALS is chosen by user ***

FINITE ELEMENT MESH INFORMATION:

Element type: 0 = Triangle; >0 = Quad.)..= 1
Number of nodes per element, NPE .....= 4
No. of primary deg. of freedom/node, NDF = 1
Number of elements in the mesh, NEM .....= 16
Number of nodes in the mesh, NNM .....= 25
Number of equations to be solved, NEQ ...= 25
Half bandwidth of the matrix GLK, NHBW ..= 7
Mesh subdivisions, NX and NY .....= 4 4

No. of specified PRIMARY variables, NSPV = 9

Node	x-coord.	y-coord.	Speci. primary & secondary variables (0, unspecified; >0, specified) Primary DOF	Secondary DOF
1	0.0000E+00	0.0000E+00	0	0
2	0.2500E+00	0.0000E+00	0	0
3	0.5000E+00	0.0000E+00	0	0
4	0.7500E+00	0.0000E+00	0	0
5	0.1000E+01	0.0000E+00	1	0
6	0.0000E+00	0.2500E+00	0	0
7	0.2500E+00	0.2500E+00	0	0
8	0.5000E+00	0.2500E+00	0	0
9	0.7500E+00	0.2500E+00	0	0
10	0.1000E+01	0.2500E+00	1	0
11	0.0000E+00	0.5000E+00	0	0
12	0.2500E+00	0.5000E+00	0	0
13	0.5000E+00	0.5000E+00	0	0
14	0.7500E+00	0.5000E+00	0	0
15	0.1000E+01	0.5000E+00	1	0
16	0.0000E+00	0.7500E+00	0	0
17	0.2500E+00	0.7500E+00	0	0
18	0.5000E+00	0.7500E+00	0	0
19	0.7500E+00	0.7500E+00	0	0
20	0.1000E+01	0.7500E+00	1	0
21	0.0000E+00	0.1000E+01	1	0
22	0.2500E+00	0.1000E+01	1	0
23	0.5000E+00	0.1000E+01	1	0
24	0.7500E+00	0.1000E+01	1	0
25	0.1000E+01	0.1000E+01	1	0

NUMERICAL INTEGRATION DATA:
Full quadrature (IPDF x IPDF) rule, IPDF = 2

Reduced quadrature (IPDR x IPDR), IPDR = 1
Quadrature rule used in postproc., ISTR = 1

S O L U T I O N :

Node	x-coord.	y-coord.	Primary DOF
1	0.00000E+00	0.00000E+00	0.29839E+00
2	0.25000E+00	0.00000E+00	0.28239E+00
3	0.50000E+00	0.00000E+00	0.23220E+00
4	0.75000E+00	0.00000E+00	0.14137E+00
5	0.10000E+01	0.00000E+00	0.00000E+00
6	0.00000E+00	0.25000E+00	0.28239E+00
7	0.25000E+00	0.25000E+00	0.26752E+00
8	0.50000E+00	0.25000E+00	0.22062E+00
9	0.75000E+00	0.25000E+00	0.13501E+00
10	0.10000E+01	0.25000E+00	0.00000E+00
11	0.00000E+00	0.50000E+00	0.23220E+00
12	0.25000E+00	0.50000E+00	0.22062E+00
13	0.50000E+00	0.50000E+00	0.18381E+00
14	0.75000E+00	0.50000E+00	0.11457E+00
15	0.10000E+01	0.50000E+00	0.00000E+00
16	0.00000E+00	0.75000E+00	0.14137E+00
17	0.25000E+00	0.75000E+00	0.13501E+00
18	0.50000E+00	0.75000E+00	0.11457E+00
19	0.75000E+00	0.75000E+00	0.75057E-01
20	0.10000E+01	0.75000E+00	0.00000E+00
21	0.00000E+00	0.10000E+01	0.00000E+00
22	0.25000E+00	0.10000E+01	0.00000E+00
23	0.50000E+00	0.10000E+01	0.00000E+00
24	0.75000E+00	0.10000E+01	0.00000E+00
25	0.10000E+01	0.10000E+01	0.00000E+00

The orientation of gradient vector is measured fromthe positive x-axis

x-coord.	y-coord.	-a11(du/dx)	-a22(du/dy)	Flux Mgntd	Orientation
0.1250E+00	0.1250E+00	0.6175E-01	0.6175E-01	0.8733E-01	45.00
0.3750E+00	0.1250E+00	0.1942E+00	0.5290E-01	0.2013E+00	15.24
0.6250E+00	0.1250E+00	0.3529E+00	0.3587E-01	0.3547E+00	5.80
0.8750E+00	0.1250E+00	0.5528E+00	0.1272E-01	0.5529E+00	1.32
0.1250E+00	0.3750E+00	0.5290E-01	0.1942E+00	0.2013E+00	74.76
0.3750E+00	0.3750E+00	0.1674E+00	0.1674E+00	0.2368E+00	45.00
0.6250E+00	0.3750E+00	0.3097E+00	0.1145E+00	0.3302E+00	20.29
0.8750E+00	0.3750E+00	0.4992E+00	0.4088E-01	0.5008E+00	4.68
0.1250E+00	0.6250E+00	0.3587E-01	0.3529E+00	0.3547E+00	84.20
0.3750E+00	0.6250E+00	0.1145E+00	0.3097E+00	0.3302E+00	69.71
0.6250E+00	0.6250E+00	0.2175E+00	0.2175E+00	0.3076E+00	45.00
0.8750E+00	0.6250E+00	0.3793E+00	0.7903E-01	0.3874E+00	11.77
0.1250E+00	0.8750E+00	0.1272E-01	0.5528E+00	0.5529E+00	88.68
0.3750E+00	0.8750E+00	0.4088E-01	0.4992E+00	0.5008E+00	85.32
0.6250E+00	0.8750E+00	0.7903E-01	0.3793E+00	0.3874E+00	78.23
0.8750E+00	0.8750E+00	0.1501E+00	0.1501E+00	0.2123E+00	45.00

Stop - Program terminated.