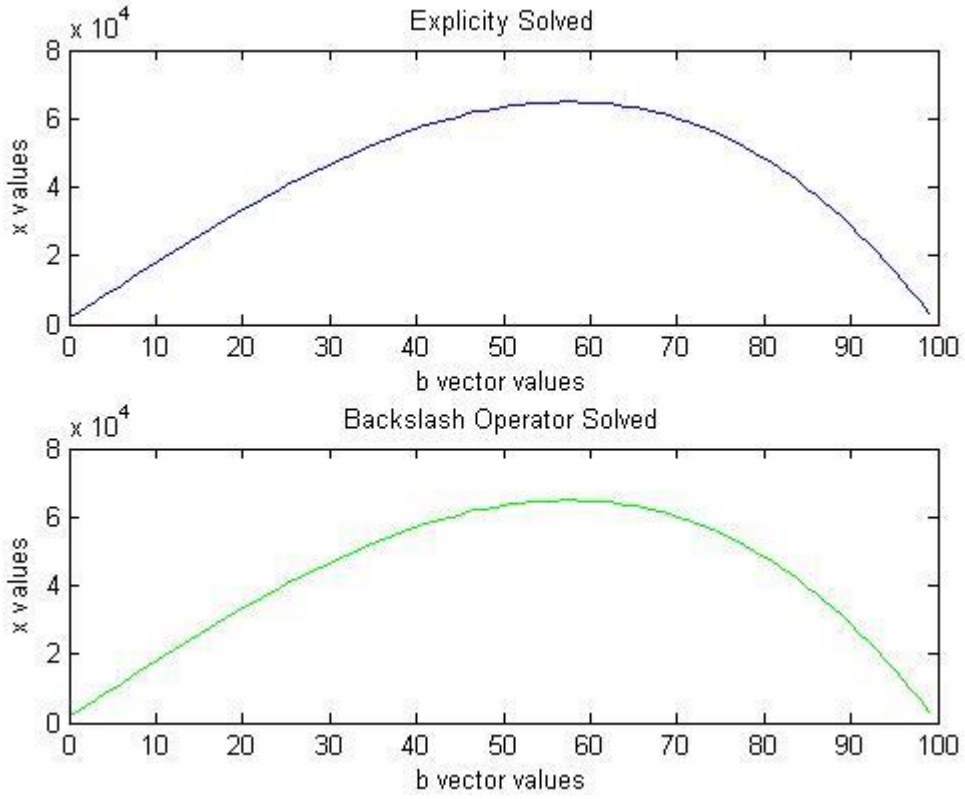
```
EDU>> a = -1

a =

   -1

EDU>> b = 2

b =

    2

EDU>> c = -1

c =

   -1

EDU>> n = 100

n =

  100

EDU>> [con] = triDiag(a,b,c,n)

Error using triDiag

Too many output arguments.

EDU>>

EDU>> triDiag(a,b,c,n)

con =

  4.1336e+03
```




```
EDU>> A = [4 -1 0 0 0;-1 4 -1 0 0;0 -1 4 -1 0;0 0 -1 4 -1; 0 0 0 -1 4]

A =

     4    -1     0     0     0
    -1     4    -1     0     0
     0    -1     4    -1     0
     0     0    -1     4    -1
     0     0     0    -1     4

EDU>> x1 = zeros(5,1)

x1 =

     0
     0
     0
     0
```

```
     0

EDU>> b = 100*ones(5,1)

b =

   100

   100

   100

   100

   100

EDU>> [X,i]=jacobi(A,b,x1,1e-6,2000)

X =

   36.5384

   46.1538

   48.0769

   46.1538

   36.5384

i =

    85

EDU>> [x,i]=sor2(A,b,x1,2000,1e-6,1)

Gaussian Siedel

x =

   36.5385

   46.1538

   48.0769

   46.1538

   36.5385
```

```
i =

   11

EDU>> [x,i]=sor2(A,b,x1,2000,1e-6,1.1)

SOR

x =

  36.5385

  46.1538

  48.0769

  46.1538

  36.5385

i =

    8

EDU>>[X,i]=jacobi(A,b,x1,1e-6,2000)

Err=

  8.2500e-05

Relerr=

  8.5817e-07

X =

  36.5384

  46.1538

  48.0769

  46.1538

  36.5384

i =

   85
```

```
EDU>> [X,i]=jacobi(A,b,x1,1e-8,2000)

Err=

  5.4382e-07

Relerr=

  5.6569e-09

X =

  36.5385

  46.1538

  48.0769

  46.1538

  36.5385

i =

115

EDU>> [x,i]=sor2(A,b,x1,2000,1e-6,1)

Gaussian Siedel

   0.4883

Relerror =

  1.0e-06 *

 Columns 1 through 3

       0       0   0.3045

       0       0   0.2284

       0       0   0.1142

       0       0   0.0428

       0       0   0.0107

 Columns 4 through 5
```

```
     0     0
     0     0
     0     0
     0     0
     0     0
x =
   36.5385
   46.1538
   48.0769
   46.1538
   36.5385
i =
    11
EDU>> [x,i]=sor2(A,b,x1,2000,1e-8,1)
Gaussian Siedel
    0.5859
Relerror=
   1.0e-08 *
  Columns 1 through 3
     0     0   0.2008
     0     0   0.1506
     0     0   0.0753
     0     0   0.0282
     0     0   0.0071
  Columns 4 through 5
```

```
     0     0
     0     0
     0     0
     0     0
     0     0
x =
   36.5385
   46.1538
   48.0769
   46.1538
   36.5385
i =
    14
EDU>> [x,i]=sor2(A,b,x1,2000,1e-6,1.1)
SOR
    2.0797
Relerror=
   1.0e-06 *
  Columns 1 through 3
     0     0   0.1916
     0     0   0.6307
     0     0   0.3501
     0     0   0.1328
     0     0   0.0804
  Columns 4 through 5
```

```
     0     0
     0     0
     0     0
     0     0
     0     0
x =
  36.5385
  46.1538
  48.0769
  46.1538
  36.5385
i =
   8
EDU>> [x,i]=sor2(A,b,x1,2000,1e-8,1.1)
SOR
  0.1573
Relerror=
  1.0e-08 *
 Columns 1 through 3
     0     0   0.5368
     0     0   0.0047
     0     0   0.1900
     0     0   0.2054
     0     0   0.0172
 Columns 4 through 5
```

```
     0     0

     0     0

     0     0

     0     0

     0     0
```

x =

```
   36.5385

   46.1538

   48.0769

   46.1538

   36.5385
```

i =

```
    10
```