1.

```
 Iterative solutions
Jacobi              iter= 47  max|err|=4.62e-11  [1.17478856 1.64317358 2.44824809 3.05598067 3.94965767 3.09947644]
Gauss-Seidel        iter= 19  max|err|=2.03e-11  [1.17478856 1.64317358 2.44824809 3.05598067 3.94965767 3.09947644]
SOR  (ω=1.25)       iter= 25  max|err|=1.42e-11  [1.17478856 1.64317358 2.44824809 3.05598067 3.94965767 3.09947644]
Conjugate Gradient iter=1000  max|err|=4.04e-03  [1.17656665 1.64269366 2.44433267 3.06002082 3.95260785 3.09922059]

Exact solution          [1.17478856 1.64317358 2.44824809 3.05598067 3.94965767 3.09947644]
```