HW7

Solve the problem

$$4x_1 - x_2 - x_4 = 0$$
$$-x_1 + 4x_2 - x_3 - x_5 = -1$$
$$-x_2 + 4x_3 + x_5 - x_6 = 9$$
$$-x_1 + 4x_4 - x_5 - x_6 = 4$$
$$-x_2 - x_4 + 4x_5 - x_6 = 8$$
$$-x_3 - x_5 + 4x_6 = 6$$

by (a) Jacobi method, (b) Gauss-Seidel method, (c) SOR method, and (d) the conjugate gradient method.

```
PS C:\Users\afatf\Desktop\E94116067_numerical_hw7> & C:/Python313/python.exe
Jacobi method:
['1.174789', '1.643174', '2.448248', '3.055981', '3.949658', '3.099476']

Gauss-Seidel method:
['1.174789', '1.643174', '2.448248', '3.055981', '3.949658', '3.099476']

SOR method:
['1.174789', '1.643174', '2.448248', '3.055981', '3.949658', '3.099476']

Conjugate gradient method:
['1.175344', '1.643726', '2.448380', '3.055760', '3.949284', '3.099019']
```