Home assignment 2

Numerical Optimization and its Applications - Spring 2019

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1 The efficiency of different iterative methods for solving a linear system

(a) We'll first import relevant package, and define A.

```
import numpy as np
from numpy import linalg as LA

A = np.array([[1, 2, 3, 4],
              [2, 4, -4, 8]])
print(A)
```

```
[[ 1 2 3 4] [ 2 4 -4 8]]
```

```
tom = 2
print(tom)
```

```
2
```

(b) t

2 Convergence properties

(a) t

(b) t

(c) t

3 GMRES(1) method

(a) t

(b) t

(c) t

(d) t

(e) t

4 Convexity

(a) t

(b) t

(c) t

5 Non Linear Optimization

(a) t

(b) t

(c) t