Homework 2

Question 1 :

```
for i in {1..20}; do mkdir -p a$i/{b1,b2,b3,b4,b5,b6,b7,b8,b9,b10}; done
```

Question 2:
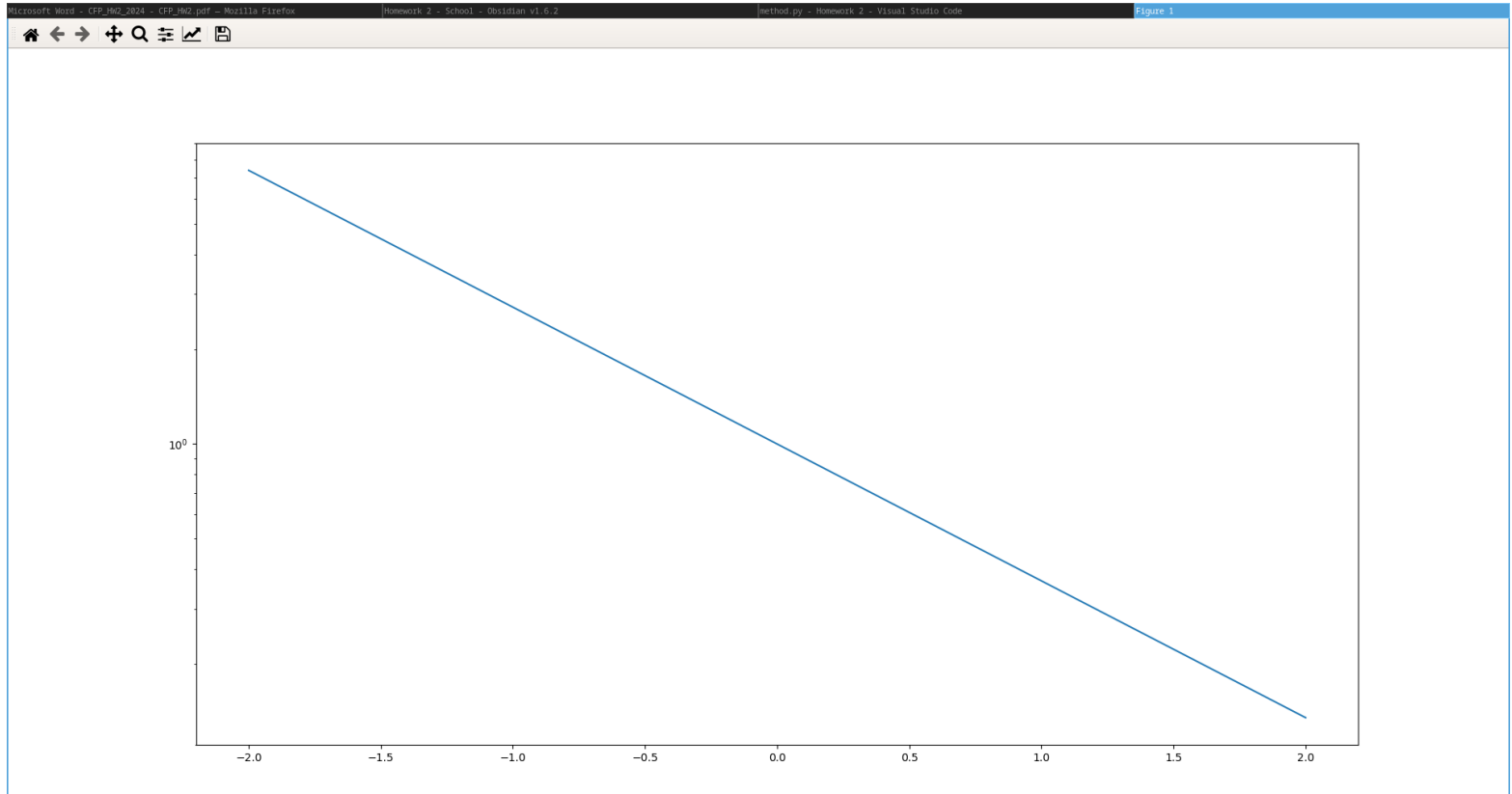
```
gawk -F '[/:]'  '{sub(/F/, "" $10);print$3, $6}' temps.dat >> out.dat
```

```
(base) [admin@fedora Homework 2]$  gawk -F '[/:]'  '{sub(/F/, "" $10);print$3, $6}' temps.dat
1  75
2  72
3  77
4  78
5  76
```

Question 3:

```
method.py > ...
1   import numpy as np
2   a = np.arange(64)
3   a.shape = (8,8)
4   print(a[2:5, 1:6])
5
```

Question 4:


```
import matplotlib.pyplot as plt

import numpy as np


x = np.linspace(-2, 2, 100)

y = np.exp(-x)

plt.figure(figsize=(8, 6))
```

```
plt.plot(x, y)

plt.yscale("log")

plt.show()
```

Question 5:

```
arr = np.arange(1, 100, 2).reshape(10, 5)
```

Question 6:

```
import matplotlib.pyplot as plt

import numpy as np

N = 10

main_diag = np.diag([-2.0] * N)

upper = np.diag([1.0] * (N - 1), k=1)

lower = np.diag([1.0] * (N - 1), k=-1)

matrix = main_diag + upper + lower
```