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Batch A2-

```
[2] | pip install numpy
    | import numpy as np
    |
    | ✓ 2.9s Python
... Requirement already satisfied: numpy in c:\users\91992\appdata\local\programs\python\python310\lib\site-packages (1.23.4)

[notice] A new release of pip available: 22.2.2 -> 22.3
[notice] To update, run: python.exe -m pip install --upgrade pip

[21] | data=np.genfromtxt('shopping.csv',delimiter=',')
    | data
    |
    | ✓ 0.3s Python
... array([[nan, nan, nan, ..., nan, nan, nan],
        [ 0.,  0.,  0., ..., nan, nan, nan],
        [ 0.,  0.,  0., ..., nan, nan, nan],
        ...,
        [ 0.,  0.,  0., ..., nan, nan, nan]])
```

```
[22] | y=data[1:,5]
    | x=data[1:,1]
    |
    | ✓ 0.9s Python

[23] | s=np.add(y,x)
    | s
    |
    | ✓ 0.3s Python
... array([ 0. , 64. ,  0. , ..., 184.25, 421. , 21.25])

[25] | r=np.negative(x)
    | r
    |
    | ✓ 0.9s Python
... array([-0., -0., -0., ..., -0., -75., -0.])
```

```
m=np.multiply(y,x)
m
```

[26] ✓ 0.7s Python

... array([ 0., 0., 0., ..., 0., 25950., 0.])

+ Code + Markdown

```
p=np.power(y,x)
p
```

[28] ✓ 0.3s Python

... C:\Users\91992\AppData\Local\Temp\ipykernel\_7640\824180069.py:1: RuntimeWarning: overflow encountered in power

```
p=np.power(y,x)
```

```
array([1.00000000e+000, 1.00000000e+000, 1.00000000e+000, ...,
       1.00000000e+000, 2.69592254e+190, 1.00000000e+000])
```

+ Code + Markdown

```
prod=np.prod(x)
prod
```

[29] ✓ 0.5s Python

... 0.0

```
sm=np.sum(x)
sm
```

[30] ✓ 0.7s Python

... 996493.467950012

```
cumsm=np.cumsum(x)
cumsm
```

[32] ✓ 0.4s Python

... array([ 0., 0., 0., ..., 996418.46795001, 996493.46795001, 996493.46795001])

```
ex=np.exp(x)
ex
```

[33] ✓ 0.8s Python

... C:\Users\91992\AppData\Local\Temp\ipykernel\_7640\3292705264.py:1: RuntimeWarning: overflow encountered in exp

```
ex=np.exp(x)
```

```
array([1.000000e+00, 1.000000e+00, 1.000000e+00, ..., 1.000000e+00,
       3.733242e+32, 1.000000e+00])
```

```
l=np.sqrt(x)
l
```

[38] ✓ 0.4s Python

... array([[0., 0., 0., ..., 0., 8.66025404, 0.],

```
abs=np.absolute(x)
abs
```

[40] ✓ 0.3s Python

... array([ 0., 0., 0., ..., 0., 75., 0.])

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```
ntm=np.nan_to_num(x)
ntm

[41] ✓ 0.8s Python
... array([ 0.,  0.,  0., ...,  0., 75.,  0.])

cbrt=np.cbrt(x)
cbrt

[43] ✓ 0.8s Python
... array([0.,      0.,      0., ..., 0.,      4.21716333,
          0.,      0.])
```

```
med=np.median(x)
med

[44] ✓ 0.7s Python
... 7.5

avg=np.average(x)
avg

[45] ✓ 0.7s Python
... 80.81861053933592

std=np.std(x)
std

[46] ✓ 0.9s Python
... 176.77193866708225
```