

Q1:

a:

```
import numpy as np
import pandas as pd
r = int(input(""))
c = int(input(""))
s = int(input(""))

aarray = np.arange(s, s+r*c, 1)
aarray = aarray.reshape([r,c])
barray = np.sqrt(aarray)

barray + aarray # output sum
```

b:

```
a = pd.DataFrame({"year": [2018, 2019, 2020,
2018,2019,2020,2018,2019,2020], "team": ["HKU", "HKU", "HKU",
"CU", "CU", "CU", "UST", "UST", "UST"], "wins": [30, 28, 32, 29, 32,
26, 21, 17, 19], "draws": [6, 7, 4, 5, 4, 7, 8, 10, 8], "losses": [2, 3, 2, 4,
2, 5, 9, 11, 11]})
```

a

c:

```
team_wins = a[["team", "wins"]].groupby("team")
print(team_wins.groups)
print(team_wins.sum())
```

d:

```
sums = team_wins.sum()

sums.loc[sums.idxmax()]
```