Week1 과제

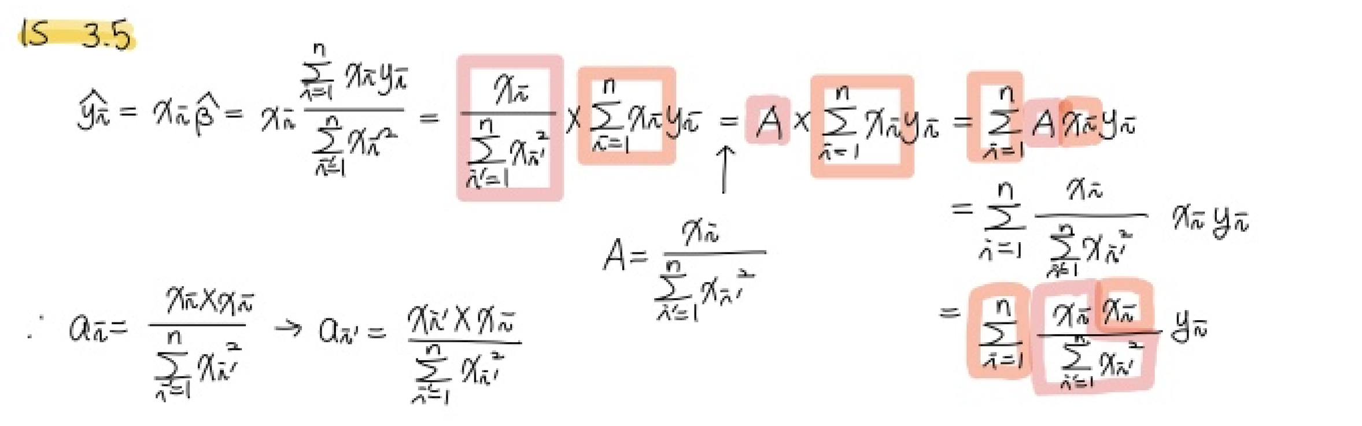
In [4]:
```
!pip install IPython
from IPython.display import Image
```

```
Requirement already satisfied: IPython in c:\users\user\anaconda3\lib\site-packages (7.12.0)
Requirement already satisfied: setuptools>=18.5 in c:\users\user\anaconda3\lib\site-packages
(from IPython) (45.2.0.post20200210)
Requirement already satisfied: colorama; sys_platform == "win32" in c:\users\user\anaconda3\l
ib\site-packages (from IPython) (0.4.3)
Requirement already satisfied: pickleshare in c:\users\user\anaconda3\lib\site-packages (from
IPython) (0.7.5)
Requirement already satisfied: prompt-toolkit!=3.0.0,!=3.0.1,<3.1.0,>=2.0.0 in c:\users\user
\anaconda3\lib\site-packages (from IPython) (3.0.3)
Requirement already satisfied: jedi>=0.10 in c:\users\user\anaconda3\lib\site-packages (from
IPython) (0.14.1)
Requirement already satisfied: traitlets>=4.2 in c:\users\user\anaconda3\lib\site-packages (f
rom IPython) (4.3.3)
Requirement already satisfied: backcall in c:\users\user\anaconda3\lib\site-packages (from IP
ython) (0.1.0)
Requirement already satisfied: pygments in c:\users\user\anaconda3\lib\site-packages (from IP
ython) (2.5.2)
Requirement already satisfied: decorator in c:\users\user\anaconda3\lib\site-packages (from I
Python) (4.4.1)
Requirement already satisfied: wcwidth in c:\users\user\anaconda3\lib\site-packages (from pro
mpt-toolkit!=3.0.0,!=3.0.1,<3.1.0,>=2.0.0->IPython) (0.1.8)
Requirement already satisfied: parso>=0.5.0 in c:\users\user\anaconda3\lib\site-packages (fro
m jedi>=0.10->IPython) (0.5.2)
Requirement already satisfied: ipython-genutils in c:\users\user\anaconda3\lib\site-packages
(from traitlets>=4.2->IPython) (0.2.0)
Requirement already satisfied: six in c:\users\user\anaconda3\lib\site-packages (from traitle
ts>=4.2->IPython) (1.14.0)
```

[1번 문제] ISL 3.5

In [54]:
```
Image("C:/Users/User/Desktop/Q1.jpg")
```

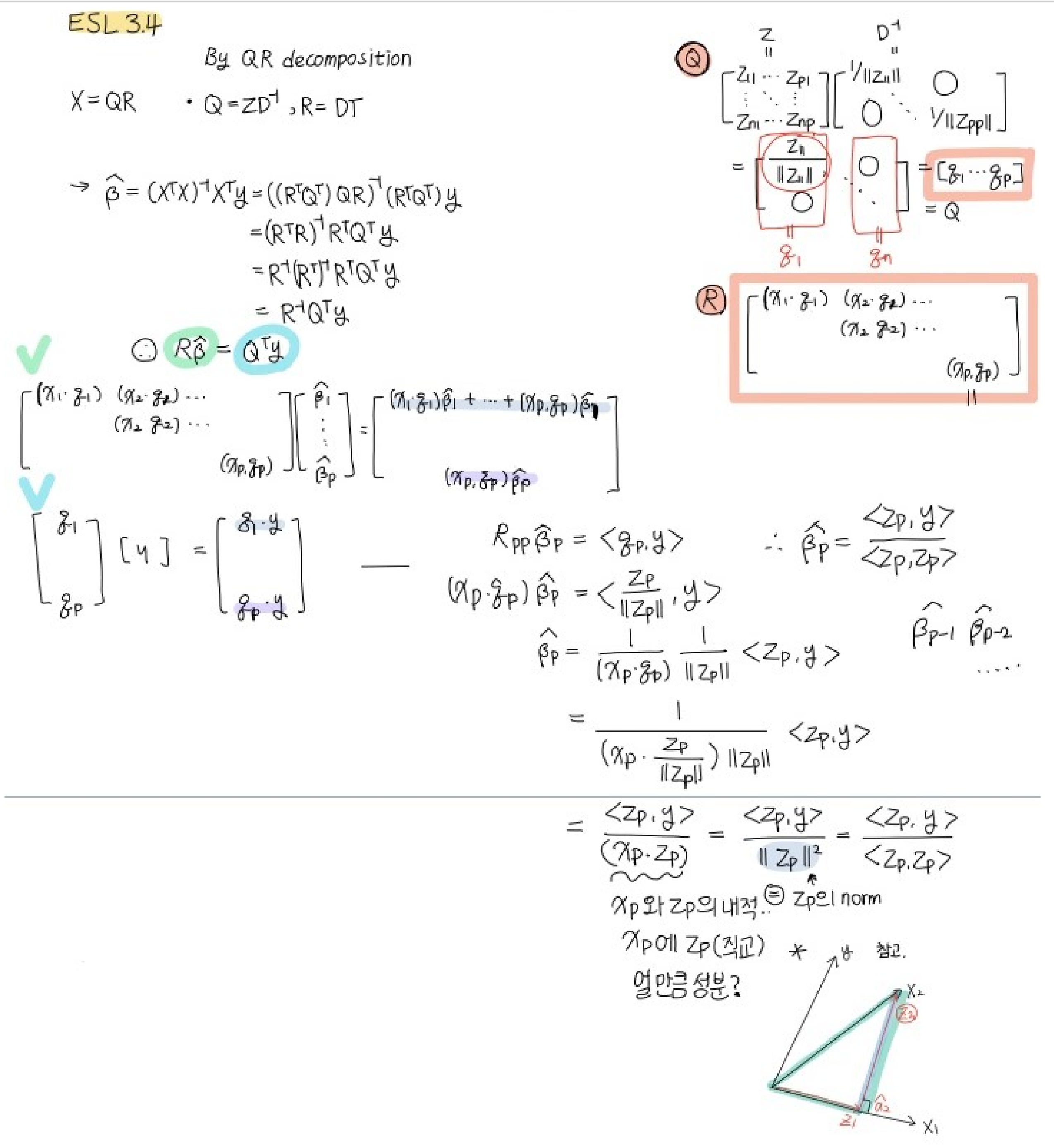
Out[54]:



[2번 문제] ESL 3.4

In [52]:
```
Image("C:/Users/User/Desktop/Q2.jpg")
```

Out[52]:



[3번 문제]: 직접 코딩해주세요!

In [31]:
```
# Data Import
import ssl
import pandas as pd
ssl._create_default_https_context = ssl._create_unverified_context #Github에서 데이터를 바로 불
러오도록 하는 세팅입니다. 해당 코드 무시하고 데이터 받아서 쓰셔도 됩니다!
data = pd.read_csv('https://github.com/YonseiESC/ESC-21SUMMER/blob/main/week1/HW/week1_data.
csv?raw=True')
y = data['mpg']
x = data.drop(['mpg'],axis=1)

import numpy as np
```

In [43]:
```
data.dtypes # horsepower에 ? 있음
```

Out[43]:
```
mpg              float64
cylinders          int64
displacement     float64
horsepower       float64
weight             int64
acceleration     float64
year               int64
dtype: object
```

In [50]:
```
data = data.apply(pd.to_numeric,errors='coerce').dropna()
data.dtypes
```

Out[50]:
```
mpg              float64
cylinders          int64
displacement     float64
horsepower       float64
weight             int64
acceleration     float64
year               int64
dtype: object
```

In [45]:
```
def YourOwnRegression(x,y):
    y1 = data['mpg'].to_numpy()
    x1 = data.drop(['mpg'],axis=1).to_numpy()
    beta_h = np.linalg.inv(x1.T@x1)@x1.T@y1 # beta 추정치
    y_h = x1@beta_h # y 추정치

    return beta_h, y_h


# 결과물 반환
YourOwnRegression(x,y)
```

Out[45]:
```
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```