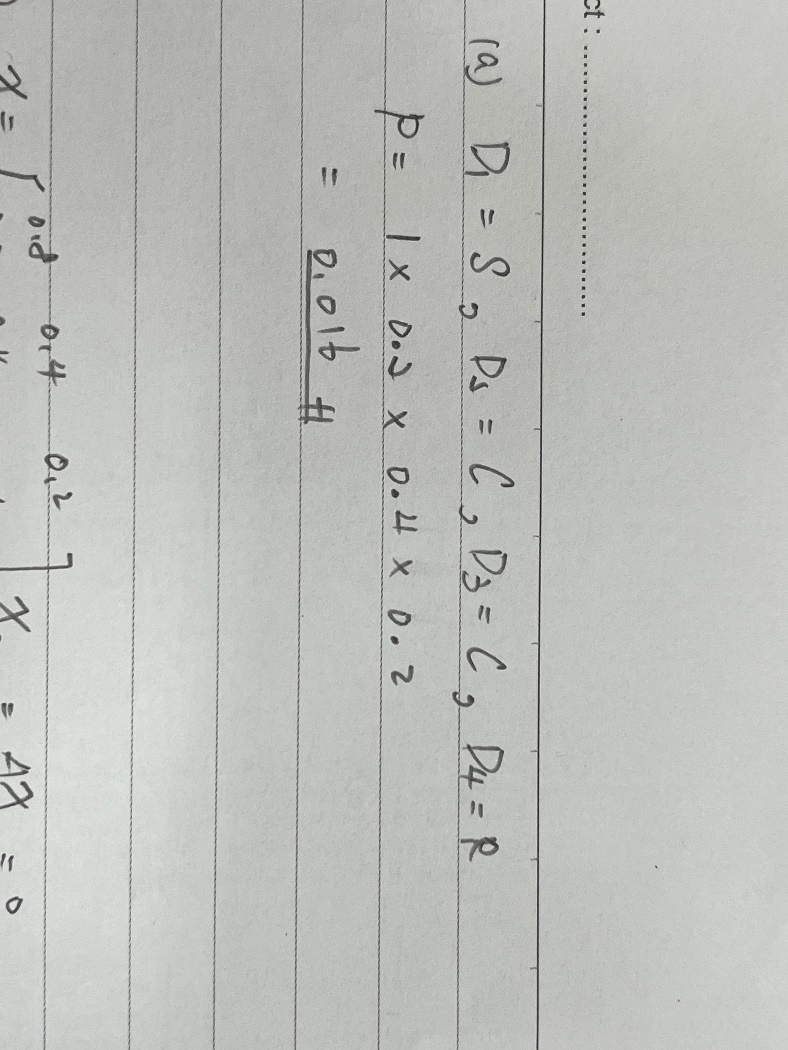
2.A



2.B

Code:

import numpy as np

trans = [

    [0.8, 0.4, 0.2],

    [0.2, 0.4, 0.6],

    [0, 0.2, 0.2]

]

today = [[0], [0], [1]]

states = [["s"], ["c"], ["r"]]

num = int(input("How many days: "))

if today[0][0] == 1:

    print("day 1 is sunny")

elif today[1][0] == 1:

    print("day 1 is cloud")

else:

    print("day 1 is rainy")

for i in range(2, num+1):

    tormorrow\_p = np.dot(trans, today)

    tomorrow\_d = np.random.choice(np.reshape(

        states, 3), replace=True, p=np.reshape(tormorrow\_p, 3))

    if tomorrow\_d == "s":

        print("day {} probable is sunny".format(i))

        today = [[1], [0], [0]]

    elif tomorrow\_d == "c":

        print("day {} probable is cloudy".format(i))

        today = [[0], [1], [0]]

    else:

        print("day {} probable is rainy".format(i))

        today = [[0], [0], [1]]

輸出

第一天是sunny:

一張含有 文字 的圖片

自動產生的描述

第一天是cloudy:

一張含有 文字 的圖片

自動產生的描述

第一天是rainy:

一張含有 文字 的圖片

自動產生的描述

2.C

Code:

import numpy as np

trans = [

    [0.8, 0.4, 0.2],

    [0.2, 0.4, 0.6],

    [0, 0.2, 0.2]

]

states = [["s"], ["c"], ["r"]]

s\_count, c\_count, r\_count = (0, 0, 0)

def sim(days):

    today = [[1], [0], [0]]

    num = days

    for i in range(2, num+1):

        tomorrow\_p = np.dot(trans, today)

        tomorrow\_d = np.random.choice(np.reshape(

            states, 3), replace=True, p=np.reshape(tomorrow\_p, 3))

        if tomorrow\_d == "s":

            today = np.array([[1], [0], [0]])

        elif tomorrow\_d == "c":

            today = np.array([[0], [1], [0]])

        else:

            today = np.array([[0], [0], [1]])

    return tomorrow\_d

for i in range(10000):

    wheather = sim(49)

    if wheather == "s":

        s\_count = s\_count+1

    elif wheather == "c":

        c\_count = c\_count+1

    else:

        r\_count = r\_count+1

stationary\_distrubution = [s\_count/10000, c\_count/10000, r\_count/10000]

print("Stationary Distriburion is" + str(stationary\_distrubution))

輸出:

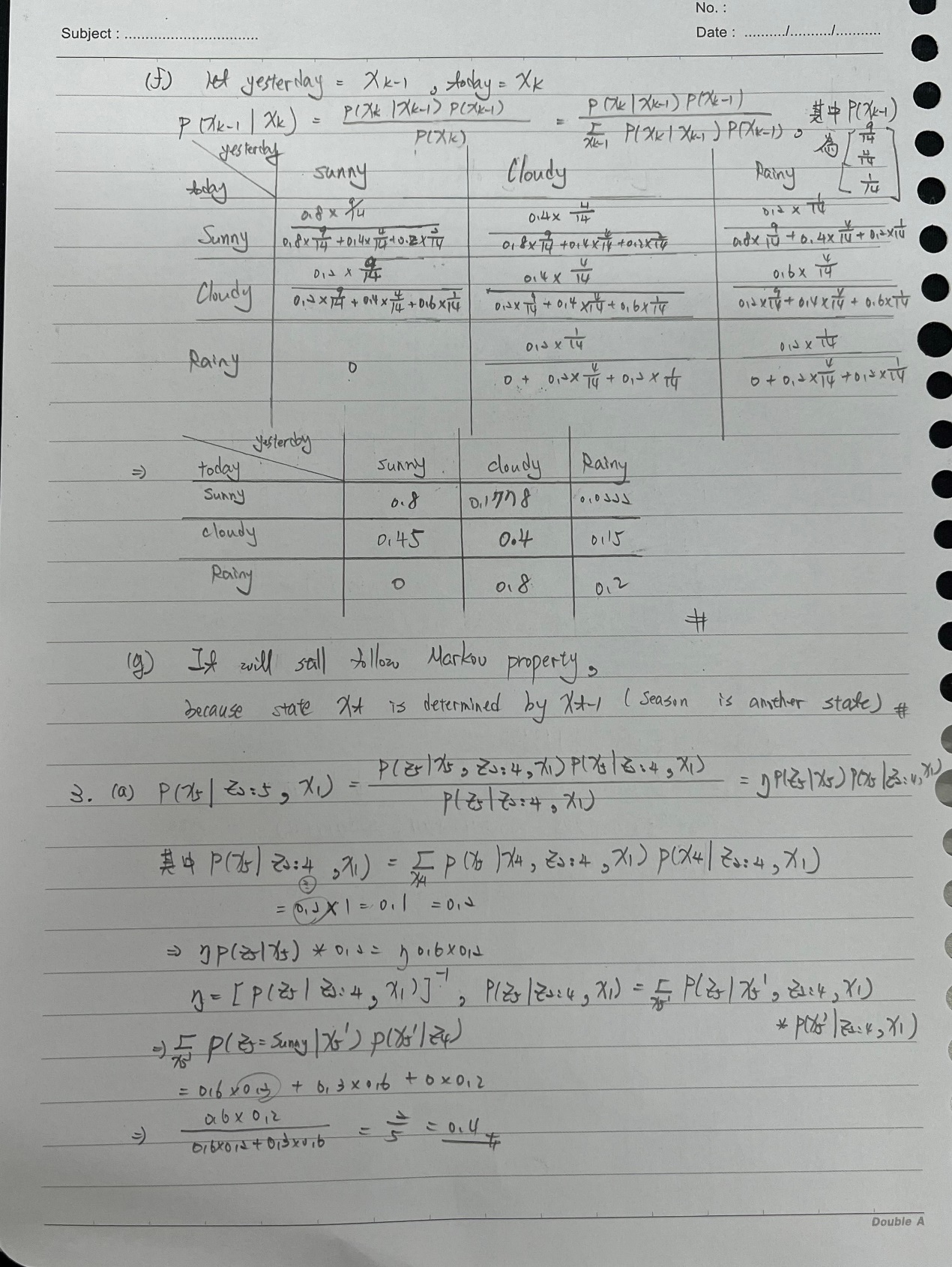


2.DE

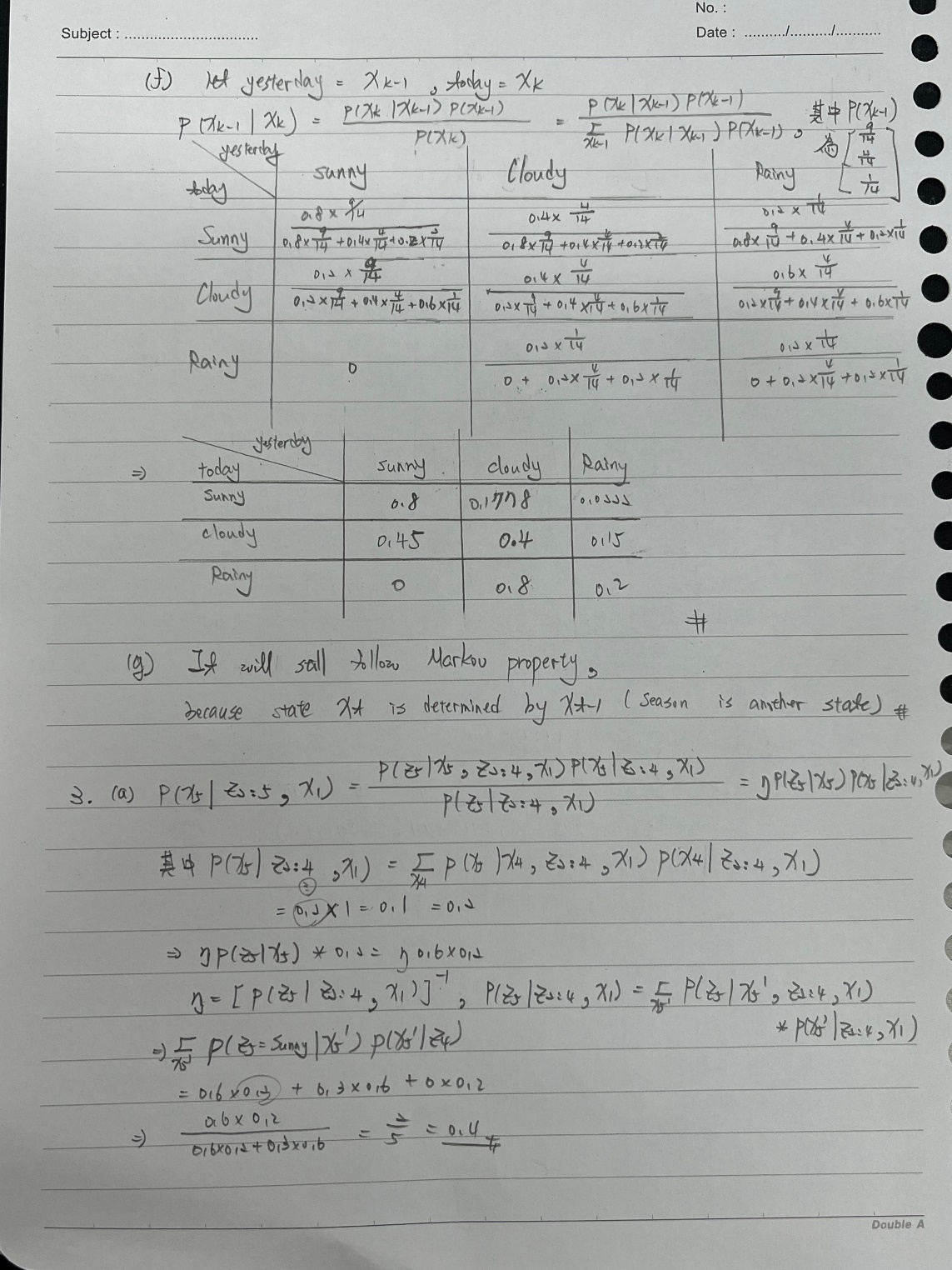
一張含有 文字, 白板 的圖片

自動產生的描述

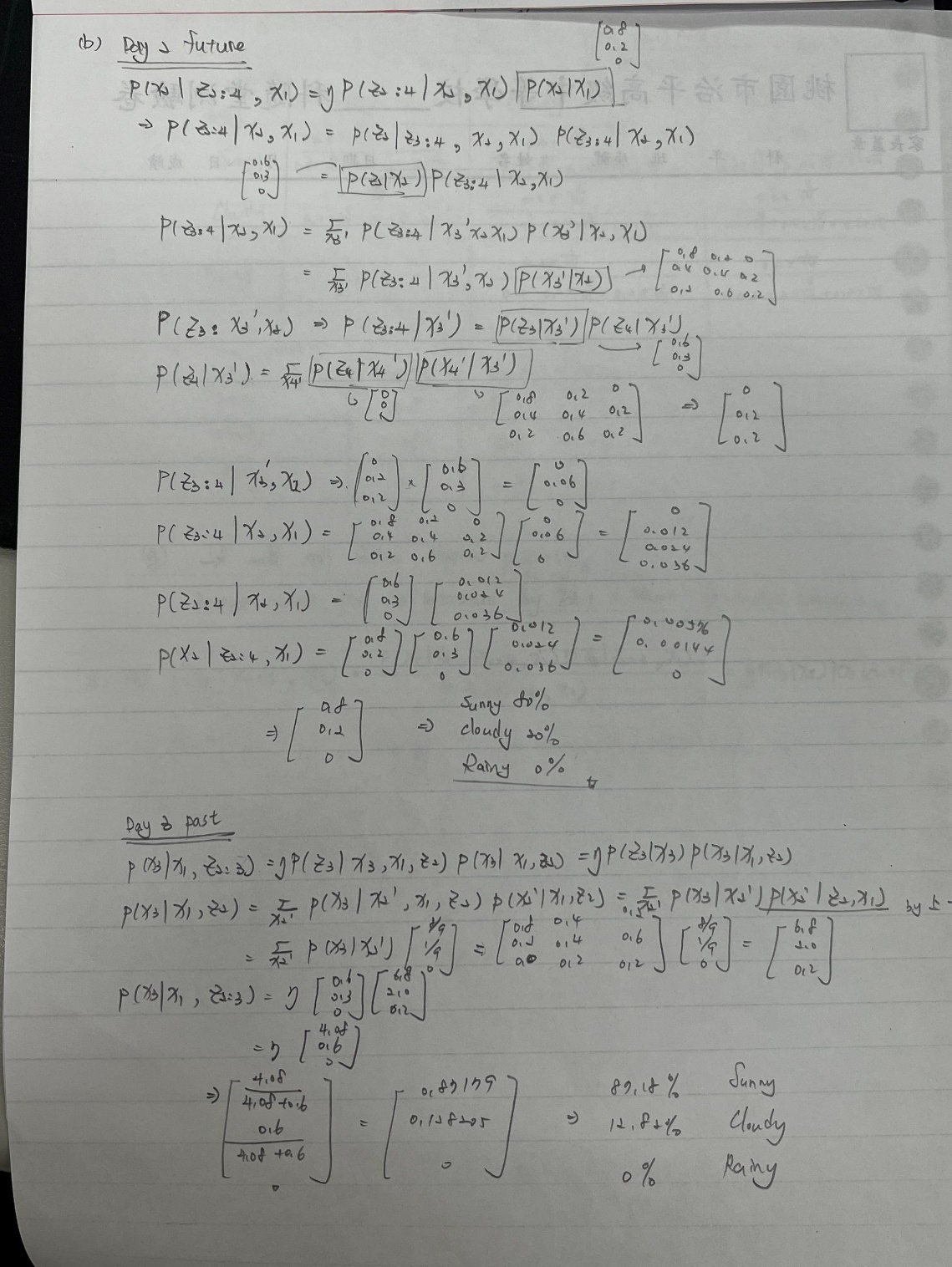
2.FG



3.A



3.B



一張含有 文字 的圖片

自動產生的描述

3.C

