

## HW2

R12521601 詹承諺

2-1:

1. Use "input" to get the input variable ntd
2. Then multiply ntd by 30 to get usd
3. Finally, print the output

2-2:

1. Draw the limited region with all the constraints
2. Get the maximum z by using linprog from scipy
3. Draw maximum z and the line of  $z_{\max} = 5x_1 + 4x_2$

2-3:

1. Use linalg.solve from numpy to get x1, x2
2. Calculate z
3. Shadow Price:  $Z - 5221\frac{3}{7} = 78.57$

Discuss:

Among these three questions, 2-2 was the one that I learned a lot from. I have learned how to use linprog to calculate minimum and maximum with lots of constraints and how to draw a limited region by matplotlib. Besides programming, I also reviewed the concepts we have been taught in the class, such as Shadow price, Linear Programming, etc.