

Question 5

Using greedy strategy: We need to ensure that the extra weight of each chemical produced is as small as possible. Therefore, we need to arrange the weights of n chemicals in ascending order and produce the chemicals with the smallest weight first. Because all chemicals evaporate at a rate of $p\%$ every day, the production of chemicals with a smaller weight first will minimize the additional weight we produce.

Example

If $N = 3, p = 10\%$

$W_0 = 10, W_1 = 50, W_2 = 100$

C_0 will be produced 1st day, C_1 will be produced 2nd day, C_2 will be produced 3rd day.

	Day 1	Day 2	Day 3
C_0	10	9	8.1
C_1	0	50	45
C_2	0	0	100

The total loss weight = $10 - 8.1 + 50 - 45 = 6.9$

The other way:

C_2 will be produced 1st day, C_1 will be produced 2nd day, C_0 will be

produced 3rd day.

	Day 1	Day 2	Day 3
c_0	0	0	10
c_1	0	50	45
c_2	100	90	81

The total loss weight = $100 - 81 + 50 - 45 = 24$

Compare 2 different way:

The first method loses significantly less weight than the second method.