**Yuan Gao z5239220 Q5**

You have to produce and deliver chemicals. You need to deliver kilograms of chemical . Production of each chemical takes one day, and your factory can produce only one chemical at any time. However, all of the chemicals evaporate, and at the end of each day you lose percent of the amount you had at the end of the previous day, so you need to produce more than what you need to deliver. Schedule the production of the chemicals so that the total extra weight of all chemicals needed to produce to compensate for the evaporation loss is as small as possible.

According to the problem,

The lose of per day is

Hence,

chemiacal in days the total lose is

Therefore,

We just sort the chemicals as increase sequence. Make lighter earlier and heavier later

Greedy proof:

Let us see what happens if we swap to and .

Because

Therefore, the optimal solution is sorting the chemicals as increase sequence.