Packaged mix-nuts is the new popular snack nowadays. A food company MightyNut has a production line that mix and pack peanuts, almond, chestnuts and raisin into small individual bags. The company advertise that the net weight in each individual bag is 20g.

Recently, the consumers association have been receiving complaints about underweight products from quite a few angry customers. The association issue a new policy that company have to pay penalty fine of ￥50 every time if the package food weight is found to be lighter than the advertising claim.

MightyNut’s packaging machine is a bit old now, so the packing performance is not always that precise. In order to avoid paying the penalty and minimize customers’ complain, MightlyNut is already setting the average packing weight a little bit more than 20g. To replace this machine, the company needs to pay ￥800,000.

Currently, MightyNut sells about 200,000 25-bags(5,000,000boxes) boxes of mix nuts every year, at the price of ￥87.5/box. The profit margin is about 30%. If the advertising net weight is 19.5g/bag, the selling price of each box would drop to ￥70.

MightlyNut ask for your help. 500 bags have been randomly sampled and weighted. With the data that have been collected, perform analysis and write a detail report to let MightyNut know what is their current situation. You should discuss the pros and cons, potential cost and profit of MightyNut’s options. You may also come up with your own suggestion.