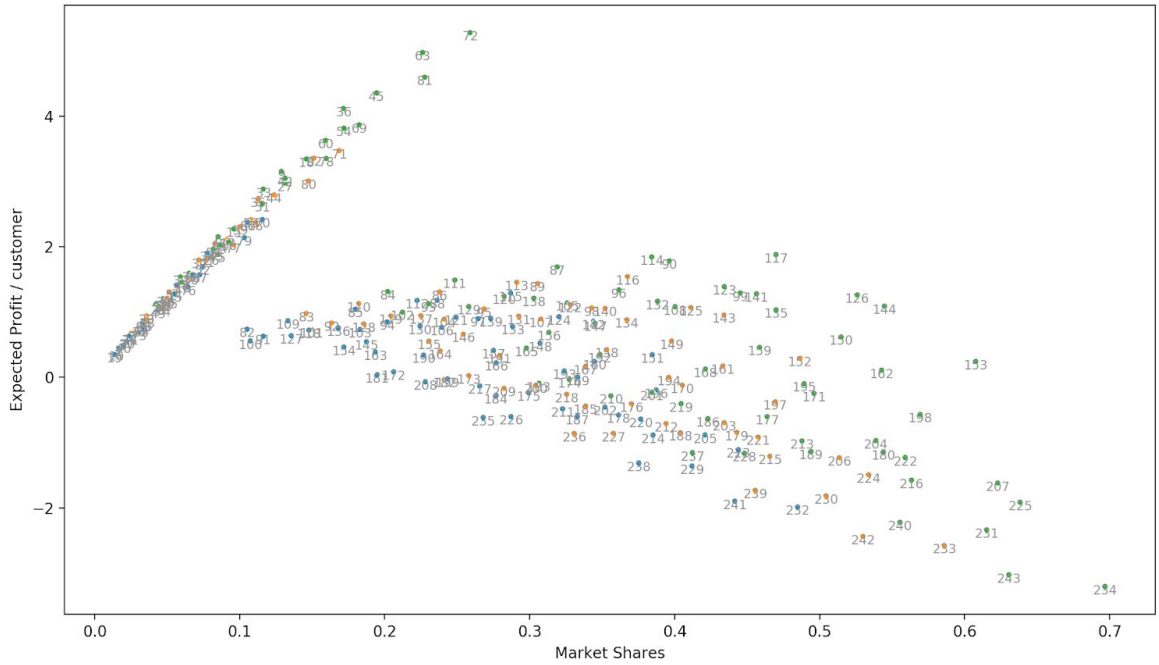
Product Optimization Exercise:

The Mandatory Tasks:

Q1.

expected profit per customer: 4.357384811895731,
market_share: 0.19452610767391657
Price: 30, Cost: 7.6

Q2. (CSV file is main_b.csv)



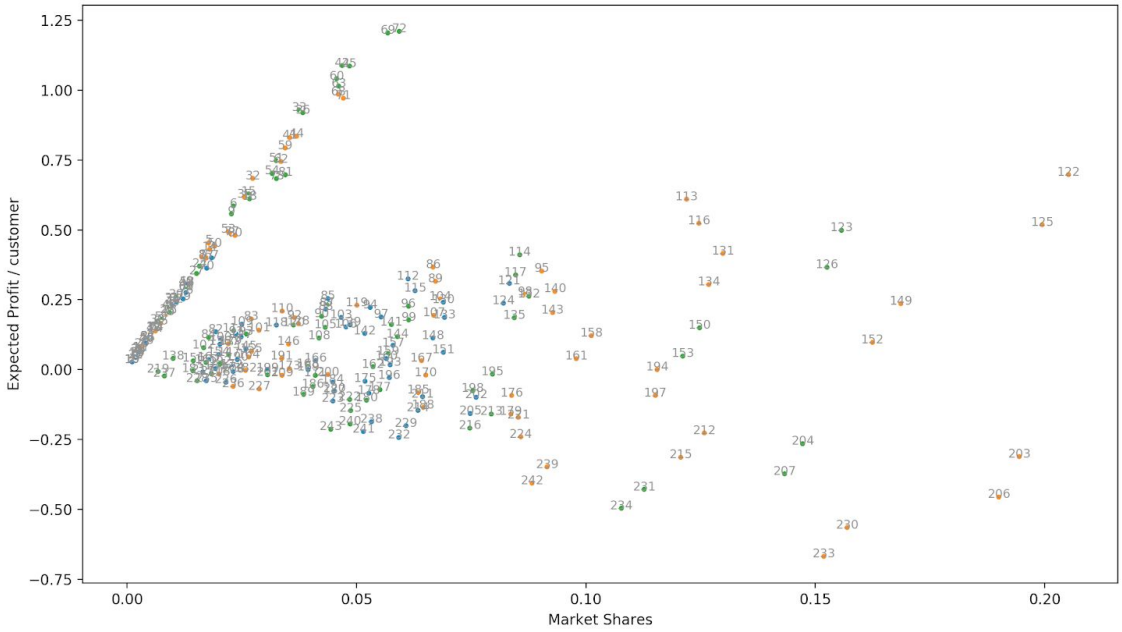
Q3.
This question depends a lot on what's the company's mission. I am assuming for my case that the company cares about gaining a profit for their products and doesn't really care about market shares.

Taking the assumptions stated above, I would go with product 72 as it has the highest expected profits. The reason for this is quite simple, we are more concerned with gaining a profit. After closely examining the attributes of the product we can see that Product 72 has the same characteristics as Product A (competitor). But on average brand C has a higher score than brand A and thus can gain an advantage when entering the market with Product 72.

```
ndas.testing instead.
  import pandas.util.testing as tm
count    311.000000
mean       3.996785
std        2.494508
min        1.000000
25%        1.000000
50%        4.000000
75%        7.000000
max        7.000000
Name: pBrC, dtype: float64
count    311.000000
mean       3.938907
std        2.501509
min        1.000000
25%        1.000000
50%        4.000000
75%        7.000000
max        7.000000
Name: pBrA, dtype: float64
```

In summary, I would like the company to produce product 72 as it yields the highest profits for us.

Q4. (CSV file is main_d.csv)



Optional Task 3 For Extra Credit:
Kindly see file optional.py