Problem Set 15.822 Strategic Market Measurement

Problem 1 (adapted from a student project)

Jamie Austen is using a conjoint estimation approach to evaluate marriage proposals, and has identified three key attributes:

Attribute 1 – "Income" which takes on three levels,

- **Plus $50K**, which is $50,000 more than Jamie's salary
- **Matching**, which is about the same as Jamie's salary
- **Minus $50K**, which is $50,000 less than Jamie's salary

Attribute 1 – "Education" which takes on three levels,

- **High School**
- **College BA**
- **PhD**

Attribute 3 – "Personality" which also takes on three levels,

- **Fantastic** (funny, charming, nice)
- **Nice** (nice)
- **So-so** (a little embarrassing in company, but basically OK)

After some soul-searching, Jamie ranked these nine potential proposers as follows:

Income	Education	"Personality"	Rank	Acceptable?
Plus $50K	High School	Fantastic	7	Yes
Plus $50K	College	Nice	9	Yes
Plus $50K	PhD	So-so	6	Yes
Minus $50K	High School	So-so	1	No
Minus $50K	College	Fantastic	5	Yes
Minus $50K	PhD	Nice	3	No
Matching	High School	Nice	4	No
Matching	College	So-so	2	No
Matching	PhD	Fantastic	8	Yes

(a) Please estimate Jamie's utility function for the attribute levels.
(b) Which attribute is most important, and which one is least important?
(c) Suppose Jamie meets two persons:

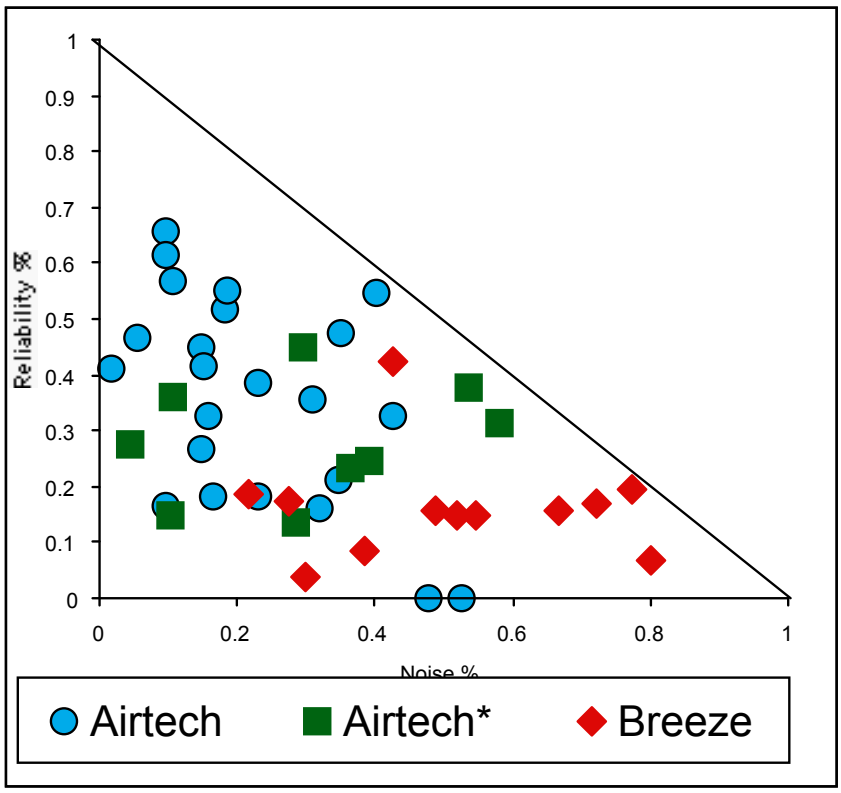
Pat, who has a Matching salary, College education and a Nice personality
Dana, who makes $25,000 more than Jamie, has a PhD, and a So-so personality.

Which person is more attractive marriage partner, according to Jamie's utility function. Is either person acceptable?

Problem 2

Look at the following market share distribution for three airconditioners (this is generated with the **airsim** Excel sheet,). The actual product descriptions are given in the table below the graph. The most popular product is Airtech, followed by Breeze, followed by Airtech*. However, if you look at the average utilities of the three products (average for everyone in the market, i.e., who filled out a survey), it appears the ordering of products by average utility is exactly reversed! The highest average utility is for the Airtech* product, followed by Breeze, followed by Airtech.

Please explain why the ordering of products by average utility does not have to match the ordering by market share. Be short but specific.



		Airtech	Airtech*	Breeze
Noise level	Very low	0	0	1
	Low	0	1	0
	Moderate	0	0	0
Cooling cap	7000 Btu	0	1	1
Reliability		0.06	0.11	0.15
Price	Price	$ 450.00	$ 680.00	$ 660.00
	M. Share	**47%**	**22%**	**31%**
average	**utility**	**4.88**	**5.48**	**5.02**