

Maximilian Untergrundbahn

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The Masters in Management (MIM) students at ESCP Europe are organising a party. The Student Representatives – Maximilian, Joan and Paul – have arranged a meeting to discuss their plans, and attempt to use microeconomics to solve five key issues:

1. Maximilian wants to buy some Beluga caviar for the party. His demand for caviar is:

$$Q = 200 - 2p$$

where Q is the quantity demanded and p is the price. If it costs £40 per gram calculate how many grams he would like to buy for his own consumption. What is the monetary measure of the value that Max gets from consuming caviar?

2. The other Student Reps oppose Max's idea, and insist on only supplying beer (x) and wine (y). A local Off-License has offered to provide some free drinks, and give the students three options
 - (a) 6 cans of beer and 3 bottles of wine
 - (b) 4 cans of beer and 5 bottles of wine
 - (c) 7 cans of beer and 2 bottles of wine

Assume that the following utility functions apply:

- Max: $U_M = xy$
- Joan: $U_J = x^{1/2}y^{1/2}$
- Paul: $U_P = 2x + y$

If each Rep. votes for their preferred option, what will they end up choosing?

3. This leads to a long discussion about the aggregation of individual preferences. Max suggests negotiating with the Off License, and asks them to provide more options. They offer
 - (d) 2 cans of beer and 10 bottles of wine.

The Reps are unable to decide whether this would be better or worse than their answer for part 2. Draw indifference maps that demonstrate the following:

- (i) The Reps being indifferent between the answer to question 2 and option (d)
 - (ii) Paul's preference for beer over wine
 - (iii) Paul's friend, Karl, who only likes wine
 - (iv) Max's argument that there needs to be a good balance between beer and wine. He says that there's not much point having lots of beer unless there's also a lot of wine.
4. Joan suggests looking at what happened from the previous party that the MIM students hosted. She points out that they spent £100, and bought cans of Fosters for £1 each, and bottles of Merlot for £5 a bottle.

* Prof. Anthony J. Evans (anthonyjevans@gmail.com) prepared this note for the purpose of aiding classroom discussion. It is based heavily on examples taken from Schotter, A., (2009) Microeconomics: A Modern Approach, Addison Wesley, (1st International Edition).

- (i) Draw the budget constraint from the last party
 - (ii) What would have happened if their income doubled?
 - (iii) What would have happened if the price of beer halved?
5. The Reps finally agree that this time they will spend £240. They will buy some cans of Tyskie (£2 each) and some bottles of Cotes du Rhone (£10 each). To avoid arguments about preferences they decide to use Max's utility function for the whole group. Use the Lagrangian technique to solve their optimization problem: find their optimal consumption bundle (i.e. how many cans of beer and how many bottles of wine they buy), and calculate the total utility that they enjoy.