Name and Student ID: _____

> Please use the space provided or back of the page. This final has 8 questions
> and 25 points (i.e., 25 percent of your course grade).
> Remember: It's important to translate/relate theory to reality. It's also
> important to say the right things and NOT say the wrong things.

1. (4 points) Think about two goods (neither perfect substitutes nor perfect complements) *you* consume each week.

   (a) (2 points) Draw your own indifference curves and budget constraint for these goods. Label quantities (with units) on each axis, show your your optimal consumption bundle and give your total spending (price times quantity) for this bundle.

   > **Solution:** You get to draw these! I am looking for a point of tangency and decent description of prices and quantities. NB: IC and BC always intersect at maximum IC. For perfect substitutes, this will be on the axis. For "in-between" goods, the IC's tangency will hit somewhere in the middle of the BC. (They never cross each other!) Tangency does not, btw, illustrate spending all your money; it merely shows how you are satiated wrt that good due to the presence of other goods (opportunity costs). The range of pairs – from bread & milk to chocolates & cigarettes – was interesting.

   (b) (1 point) Assuming that you like both of these goods and spend only a fraction of your total budget on them, explain why you are not consuming more, as a means of reaching a higher indifference curve.

   > **Solution:** Probably because you're satiated (diminishing returns) and due to opportunity costs (your demand hits the supply curve).

   (c) (1 point) Now the price of one of these goods doubles. Explain how you are likely to react, going forward, in terms of quantity demanded, elasticity, and so on.

   > **Solution:** Yes, higher price results in lower quantity (law of demand), but it's more likely that you would cut down a bit (kinda inelastic) because its a small share of your budget. You may substitute into another, similar good.

2. (2 points) Give an example of price discrimination that favors you. Give a different example of discrimination that disfavors you.

   > **Solution:** Lots of age/student examples. Also (not)NL and (fe)male examples.

3. (3 points) The government wants to help the poor by building subsidized housing in particular areas. Explain why this policy is unlikely to help the poor as much as an

alternative policy that costs the same to taxpayers. Make sure you discuss budget constraints and transaction costs in your answer.

> **Solution:** Lots of variety in these answers, most of which were right. I was thinking rental housing (see below), but it was also ok to say "subsidized housing for sale," which does, indeed, favor richer people, directly or not. There are also more TCs related to showing that you're poor, compared to direct cash transfers.
>
> Housing for the poor requires that they live in designated buildings and neighborhoods. Direct cash payments to the poor (based on the same selection criteria) means that they can live where they want (perhaps with an addition of their own cash to "upgrade"). Cash subsidies also make it easier for the poor to move and for the government to end subsidies if the poor make "enough" money. It's much harder to kick someone out of their flat (high TCs) than to end a subsidy if someone crosses a wealth threshold. It's also less likely that the poor would end up in ghettos or poorly-constructed housing if they can live where they want, in buildings built by private developers. Finally, don't forget that the increase in utility from an outward shift in the BC always meets/exceeds the increase in utility from lowering the price of one consumed good.
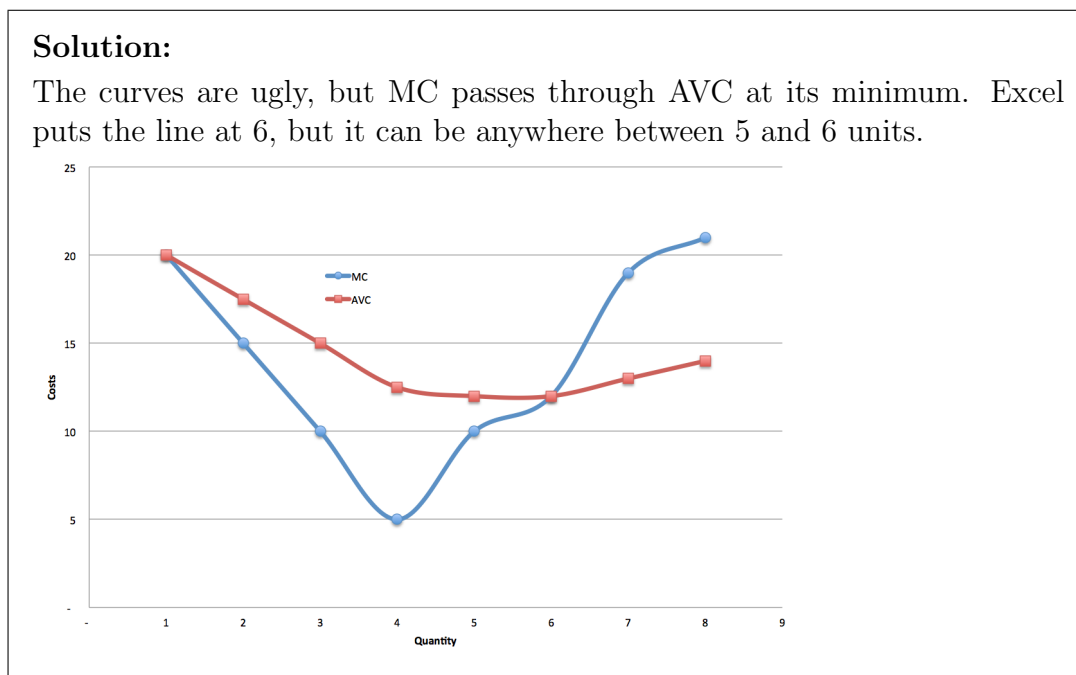
4. (6 points) Time for costs!

   (a) (3 points) Complete the following table, assuming fixed costs of 210. Don't worry about decimals (answers within ±1 of the right answer will get full credit).

Quantity	MC	AVC	ATC
1	20		
2	15		
3	10		
4	5		
5	10		
6	12		
7	19		
8	21		

   > **Solution:** It definitely helps to calculate TVC before finding AVC. Don't forget to include FC!!
   >
   > | Quantity | MC | AVC | ATC |
   > |----------|-------|-------|--------|
   > | 1.00 | 20.00 | 20.00 | 230.00 |
   > | 2.00 | 15.00 | 17.50 | 122.50 |
   > | 3.00 | 10.00 | 15.00 | 85.00 |
   > | 4.00 | 5.00 | 12.50 | 65.00 |
   > | 5.00 | 10.00 | 12.00 | 54.00 |
   > | 6.00 | 12.00 | 12.00 | 47.00 |
   > | 7.00 | 19.00 | 13.00 | 43.00 |
   > | 8.00 | 21.00 | 14.00 | 40.25 |

(b) (2 points) Now draw the MC and AVC curves. Show where (in terms of quantities) the MC curve intersects the AVC curve.

> **Solution:**
> The curves are ugly, but MC passes through AVC at its minimum. Excel puts the line at 6, but it can be anywhere between 5 and 6 units.
>
>

(c) (1 point) Assuming a market price of 15, how many (whole) units should be produced? What's the profit or loss of the firm?

> **Solution:** A price of 15 (same as marginal revenue) will intersect the MC curve at 15, i.e., producing 6, but not 7 units. Given FC of 210 and AVC of 12 at that point, there's a profit of 3 per unit. Overall profits are $6 * (15 - 12) - 210 = -192$. This was the hardest problem on the exam, in terms of blank or wrong answers.

5. (2 points) Why (and when) would your labor curve bend backwards, in terms of time and earnings?

> **Solution:** When you are making little money, you prefer to work more to make more money. Once you are making "enough" you want more leisure to enjoy your earnings via, e.g., recreation, socializing, etc. Most people become more interested in time (over money) when they get families, get security, get older. Younger people who spend much more time socializing than working often have trouble with debt or security later in life. Poorer people never earn enough to afford leisure (or have enough security to want it)

6. (3 points) What's the advantage of organizing a cartel? Give two reasons why cartels might break down (ignoring that they are illegal in many places).

> **Solution:** The advantage is that a cartel can charge higher prices (closer to monopoly prices), thereby raising profits. Cartels tend to break down when some members defect from the agreement (e.g., OPEC members pumping more oil) or other firms enter the market, taking market share from the cartel, thereby lowering prices.

7. (3 points) Let's talk about the time value of money. Calculate the present value now of receiving € 135 two years in the future, using a discount rate of 10 percent. Now consider a request for your impatient friend, who wants to borrow € 100 from you now, with a repayment of € 135 in two years. Is this a good deal for you? Does your answer change if your friend has only a 90 percent chance of paying you back? What if you're risk averse when it comes to potential losses?

> **Solution:** The NPV of 135 in two years with a 10 percent discount rate is $\frac{135}{1.1^2} = 111.6$ so you're happy to lend 100 today to get 135 in two years. If there's a 10 percent risk of default, then your expected payback is $0.9 * 111.6 = 100.40$, so still (barely) worth it to you. You are less likely to make the loan if you're risk averse, since the risk neutral return barely breaks even. So: yes, yes and no.

8. (2 points) What aspect of "blackboard" economic theory that *actually* works in the real world do people *you know* often get wrong? Put differently: explain how people *you know* could improve their lives by applying basic economic idea that they do not currently use. (Hint: Maybe there's something you learned in this class that changed your personal behavior.) Given a example and name/explain the theory that applies.

> **Solution:** So many amazing answers! My (sample) answer: Many people fail to calculate the time opportunity cost of choices they make based on prices, e.g., riding your bike to three stores in one hour to save 2 on an item. People who took these costs into account might be seen to be spending more money but saving so much time that they realize that the extra spending is "worth it"?