EC3322
Industrial Organization I
Semester 1, 2015-2016
Tutorial #5

You will receive full credit if you present your attempt at the solution during tutorial, whether or not you have the correct answer. Also, feel free to discuss the questions and answers with other students who have not yet attended tutorial. However, I request that you do not ask former students of this module or current students who attend an earlier tutorial than you for the answers before your own tutorial has taken place.

1. Find examples of products that are *both* horizontally *and* vertically differentiated products.. **Do not google an example! Find one from your daily life!**

2. (Final Sem 2, 2014-15) Which of the following is an example of a prisoner's dilemma?

   (a) Hiring attorneys in labor disputes

   (b) Intel making two versions of their 486 microchip

   (c) An airline manufacturer building larger than usual small jets, a niche ingored by other companies

   (d) DuPoint expanding capacity to deter entry

   (e) None of the above

3. (Midterm 2011) A monopolist produces a product whose demand and production costs vary with quality z and quantity q according to:

$$\begin{aligned} P(z,q) &= z(1-q) \\ C(z,q) &= z^2 q \end{aligned}$$

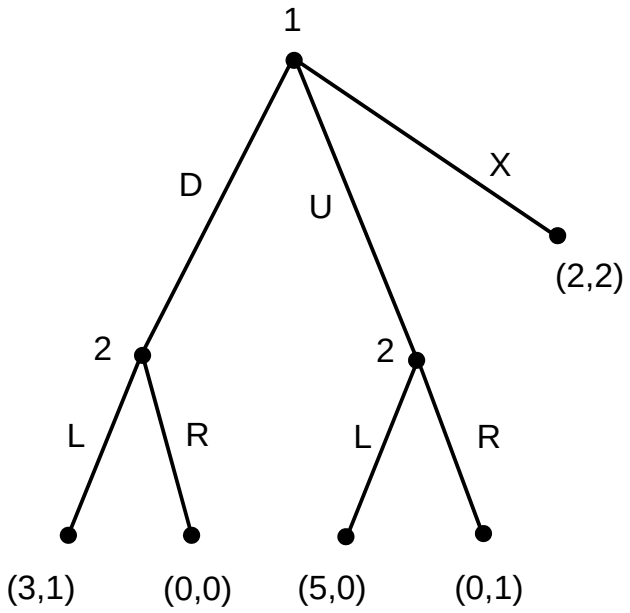
   Note that $z \geq 0$ in this problem.

   (a) Calculate the price and quality levels that a monopolist would choose and the corresponding quantity sold.

   (b) Find consumer surplus and profits.

   (c) Derive the socially optimal quality for the quantity choice q^* found in part (a).

4. (Midterm, Semester 2, 2012-13) Consider the following game in extensive form.



(a) Find the normal form representation of this game.

(b) Find all pure strategy Nash equilibrium or equilibria (there could be one or more).

5. Two firms are competing in an oligopolistic industry. Firm 1, the larger of the two firms, is contemplating its capacity strategy, which could either be "aggressive" or "passive." The aggressive strategy involves a large increase in capacity aimed at increasing the firm's market share, while the passive strategy involves no change in the firm's capacity. Firm 2, the smaller competitor, is also pondering its capacity expansion strategy; it will also choose between an aggressive strategy and a passive strategy. The table below shows the profits associated with each pair of choices:

		Firm 2	
		Aggressive	Passive
Firm 1	Aggressive	25,9	33,10
	Passive	30,13	36,12

(a) If both firms decide their strategies simultaneously, what is the Nash equilibrium?

(b) If firm 1 could move first and credibly commit to its capacity expansion strategy, what is its optimal strategy? What will firm 2 do?