

# Sample Solutions for Final Exam

## 1. Natural Gas (20 points)

### a. 10 points

$$p = a - bQ$$

$$a = 131, b = 0.1$$

$$q'_1 = 150, q'_2 = 240$$

### b. 10 points

$$(94 - 77) \times 170 - (92 - 77) \times 150 = 640$$

## 2. Contractual Clauses (25 points)

### a. 8 points

Assume that both firms choose to offer a meet-the-competition guarantee:

Firm 1 / Firm 2	5G	4G	3	2
5G	( <u>150</u> , <u>150</u> )	( <u>100</u> , 100)	( <u>50</u> , 50)	( <u>0</u> , 0)
4G	(100, <u>100</u> )	( <u>100</u> , <u>100</u> )	(50, 50)	( <u>0</u> , 0)
3	(50, <u>50</u> )	(50, <u>50</u> )	( <u>50</u> , <u>50</u> )	( <u>0</u> , 0)
2	(0, <u>0</u> )	(0, <u>0</u> )	(0, <u>0</u> )	( <u>0</u> , <u>0</u> )

### b. 5 points

If the other firm set the price at  $P$ , there is no added benefit from setting higher or lower price:

- Setting the price  $> P$ : You have to offer a meet-the-competition guarantee in order to obtain the same profit as setting the price at  $P$ .
- Setting the price  $< P$ : Since the other firm would choose to offer a meet-the-competition guarantee to maximize its profit, you could not obtain more market share by setting the price  $< P$ . Thus, the profit would only be lower when setting a lower price.

Thus, there is no incentives for both firms to lower the price.

### c. 12 points

False. It will be much more costly for you to lower the price. If you lower the price to any of your customers, you also have to lower the price to your major customers due

to most-favored clauses (MFC). Therefore, your rival can take advantage by offering a lower price to attract customers who have not been offered MFC from you. Similarly, it would be harder for you to target your rival's customers within price competitions.

(Note that **MFC are totally different situations to meet-the-competition guarantee.**)

### 3. Sony PlayStation and Microsoft Xbox in 2009 (40 points)

#### a. 10 points

Sony / Microsoft	\$399	\$299
\$399	(1032.5, 960)	(767.25, <u>1012.5</u> )
\$299	( <u>1186.75</u> , 637)	( <u>978.75</u> , <u>920</u> )

#### b. 10 points

$$-\frac{1}{b} \cdot \frac{P_0}{Q_0}$$

$$b = \frac{100}{3}$$

1. -1.368
2. -0.7634
3. -1.4509
4. -0.7973

#### c. 10 points

$$\frac{p - MC}{p} = \frac{1}{|e|}$$

- Lower elasticity, higher market power
- Major tradeoff: price and quantity could not increase at the same time

Not consistent. According to the elasticity rule, it is impossible that the absolute value of elasticity is lower than 1. Otherwise,  $p < p - MC$ , which does not happen in reality.

(Note that **the elasticity rule is not the same as law of demand.**)

#### d. 10 points

- The video game console is just one of many ways to earn profits

- Market share is an important factor to attract game producers
- Once the game console became more popular, the company could earn more from other channels such as licensing
- From the results above, it could be possible for Sony to sell PS3 at a higher price. However, Sony decided to keep it at a lower price maybe due to entry deterrence
- The main purpose was to maximize overall profits

#### 4. Netflix (10 points)

Important Idea: Economies of scale

- Due to high market share, the per-share cost for exclusive contents would be much lower than new comers.
- New comers do not have enough users to lower down the average cost. However, in order to attract consumers, they have to provide original contents, which may be quite costly. This would be an entry barrier.
- Besides, since the original contents on Netflix keep increasing, the benefits for subscribing Netflix become higher and higher, which may further exclude consumers from subscribing additional platforms.

#### 5. Ivy League (10 points)

After 1991, there was still a tacit collusion within Ivy League universities. However, once Princeton started offering full scholarships in 1998, it would be better for other universities to follow suit in order to attract good students.