



**SciencesPo.**

**NAME:**

**First name:**

**Name of the exercise session (seminar) teacher:**

***INTRODUCTION TO ECONOMIC REASONING:  
PRINCIPLES OF MICROECONOMICS  
MID-TERM EXAM***

**OCTOBRE 26<sup>th</sup>, 2013**

**Duration: 3 hours**

**THIS EXAM CONTAINS A TOTAL OF 80 POINTS**

The use of a calculator is forbidden. Answer in the space provided after each question. If the space provided is insufficient, use the blank pages at the end of the exam and identify clearly the part and the question concerned.

## **PART A : MCQ (20 POINTS)**

*Only one answer per question is correct. Circle the correct answer.*

**1. A researcher can establish a causal link between two correlated variables y and x if the researcher:**

- a. has identified causality by using a natural or a controlled experiment.
- b. ran a regression of the y variable on the x variable and found a positive and statistically significant coefficient.
- c. ran a regression of the y variable on the x variable and found a negative and statistically significant coefficient.

Right answer: +2 ; wrong answer: -1 ; no answer: 0.

**2. An ordinary good is:**

- a. a good for which quantity demanded increases when income increases.
- b. a good for which quantity demanded decreases when income increases.
- c. a good for which quantity demanded increases when price decreases.
- d. a good for which quantity demanded decreases when price decreases.

Right answer: +2 ; wrong answer: -1 ; no answer: 0.

**3. Among the following statements, which one is CORRECT:**

- a. The optimal choice corresponds to the point where the marginal utility of a good consumed equals the opportunity cost of its marginal consumption.
- b. The optimal choice corresponds to the point where the consumer reaches satiety.
- c. The optimal choice corresponds to the point where demand is perfectly inelastic.

Right answer: +2 ; wrong answer: -1 ; no answer: 0.

**4. If the quantity demanded for a good X decreases when the price of another good Y increases, the two goods X and Y are likely to be:**

- a. normal goods.
- b. complementary goods.
- c. substitute goods.

Right answer: +2 ; wrong answer: -1 ; no answer: 0.

**5. According to hedonic price theory, which of these statements is FALSE:**

- a. the price of a good reflects the cost structure of the sector in which the good is produced.
- b. the price of a good is an increasing function of its abundance.
- c. the price of a good reflects the pleasure the good delivers through its different characteristics.

Right answer: +2 ; wrong answer: -1 ; no answer: 0.

**6. For a utility function in which one of the goods is a numeraire and the other good is called B, the first order condition (i.e. which corresponds to the consumer's optimal choice) is**

- a. another way of saying the following principal: the marginal utility (or marginal benefit) of consuming B is equal to the opportunity cost of B's consumption.
- b. an equation that says that the relative prices of the two goods are equal to the disposable income divided by the consumption of the good that is not a numeraire.
- c. an equation that says that the marginal utility of consuming the numeraire is equal to the price of the other good.

Right answer: +2 ; wrong answer: -1 ; no answer: 0.

**7. In the graph that shows consumption, the budget constraint**

- a. is a decreasing curve, with a slope that varies with the consumption of good C represented on the horizontal axis.
- b. shifts upwards and to the right if the disposable income before consumption increases.
- c. shifts downwards and to the left if the disposable income before consumption increases.

**8. In the ordinal vision of utility, maximizing utility under a budget constraint implies:**

- a. that the happiness of the individual will be maximized.
- b. that the individual will have some income left to pursue his happiness.
- c. none of the above

Right answer: +2 ; wrong answer: -1 ; no answer: 0.

**9. Which of the following properties DOES NOT correspond to the firm's optimum?**

- a. marginal revenue equals marginal cost.
- b. revenue equals cost.
- c. marginal profit is equal to zero.

Right answer: +2 ; wrong answer: -1 ; no answer: 0.

**10. Granger causality can predict a causal link between two variables that actually does not exist. This statement is**

- a. True because the Granger causality test is not 100% reliable from a statistical point of view.
- b. False because the concept of causality in social sciences is larger than that.
- c. True because Granger causality does not take into account economic agents' anticipations.

Right answer: +2 ; wrong answer: -1 ; no answer: 0.

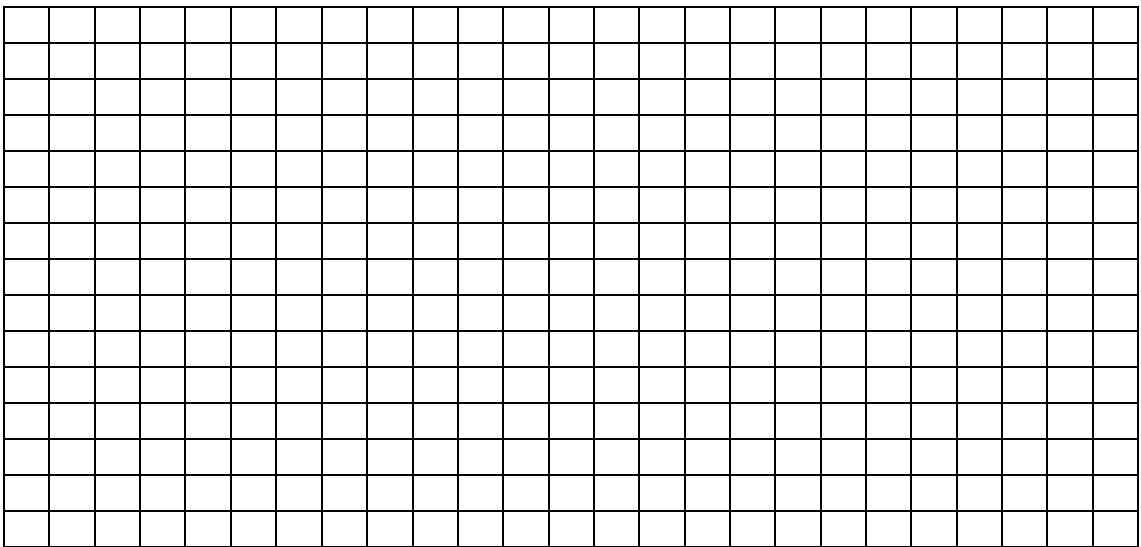
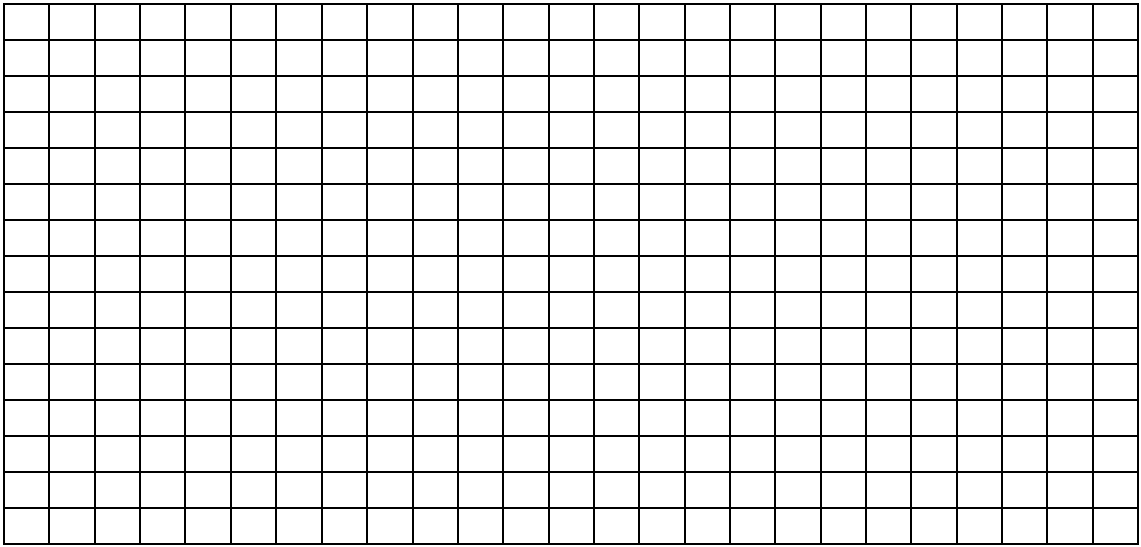
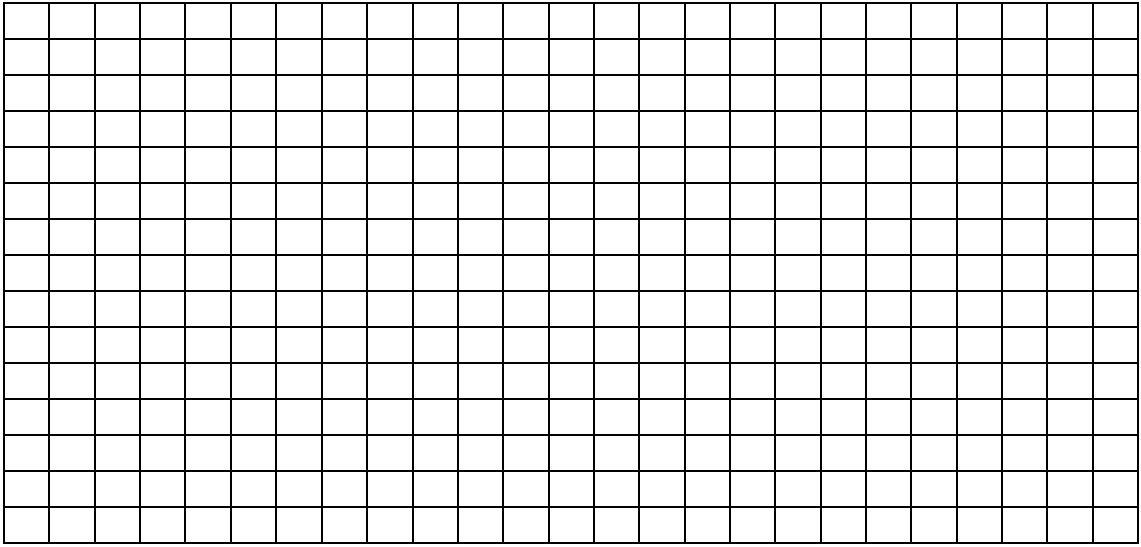
**PART B : Questions about the course (20 points)**

For each question, answer in 10 to 15 lines **maximum** in the space provided.

- 1. What is a counterfactual? How can this be useful in an evaluation of a given public policy? Explain using examples. (8 points)

Horizontal lines for writing the answer.





## **PART C : CASE STUDY (20 points)**

*For each question, answer in the space provided, using concepts studied in lectures 1 to 3.*

In a research article, an economist from the Indian Statistical Institute called Farzana Afridi studies the impact on school participation of a government program in India aimed at increasing students' access to school meals. More specifically, the "article studies the impact of transition of the scheme from a take-home programme (monthly provision of free, raw food grains) to its current form of providing free cooked meals on school participation in a rural area of India."

Here is how she describes the program:

### *"The School Feeding Programme in India*

The National Programme of Nutritional Support to Primary Education was initiated by the federal government of India in August 1995 (Government of India, 1995). The programme mandated provision of free meals in all public primary schools (not in private primary schools) across the country. Every child enrolled in grades one to five was to be served wheat porridge<sup>1</sup> (sweet and salty, on alternate days) cooked from 100 grams of raw wheat or rice on the school premises during the school lunch break (or mid-day and hence also called the mid-day meal (MDM) programme), providing 413.80 kcal and 8.20 grams of protein. The state governments were responsible for financing the cost of converting food grains, provided free by the federal government, into cooked meals. States that could not raise resources were allowed, in the interim, to distribute free grain rations to each enrolled child at the rate of three kilograms per school month conditional on a minimum monthly attendance of 80 per cent per student. However, this conditionality was not strictly imposed. A Supreme Court of India judgment in 2001 directed all state governments, which were yet to implement the programme, to provide cooked meals in all targeted schools within six months."

She then gives some information on the data she uses for her research:

### *The School Feeding Programme in the Survey Region*

This article draws upon survey data collected in one of the 11 census blocks of Chindwara district in Madhya Pradesh (MP) in 2004. MP is one of the most underdeveloped states in the country, in terms of both poverty ratios and educational attainment. According to the National Sample Survey (NSS), 11 per cent of all children between six and 11 years who were not in school in 1999–2000 in India were in Madhya Pradesh. During the same period rural poverty in MP was 30 per cent (Deaton and Dreze, 2002), four percentage points higher than the average rural poverty in the country. The potential impact of a school subsidy programme in this region can, therefore, be substantial.

Chindwara, located in south central MP, is one of the largest districts in the state with a population of almost two million in 2001. The surveyed block is one of the officially designated 120 economically deprived census blocks in the state. In this block public primary schools were distributing grain rations to all enrolled students up until April 2003, despite the court verdict mandating cooked school meals in 2001. Although most public schools here transitioned from distributing food grains to providing meals in school in July 2003 (the first month of a new academic year), some continued to distribute wheat grains at the rate of two kilograms per student per school month even after July. This quantity of food grains was equivalent to the 100 grams of wheat provided under the cooked meal programme on a school day (a school year comprises of 10 school months each containing 20 school days on average).

---

<sup>1</sup> wheat porridge: sorte de bouillie à base de blé.

(...)

Forty-one of the 150 villages in the census block were randomly selected for a school survey. Within each village all public and private primary schools were surveyed during an unannounced visit in January and February 2004 for information on the school meal programme, student participation and school infrastructure. In total, information was obtained for 74 primary school, including 10 private schools in the selected census block. For the purpose of the analysis the sample is restricted to the public primary schools only.

Within each school aggregate participation data on enrolment and attendance was obtained at the grade and gender level from official school registers for two school months, July and December 2003. The enrolment level was obtained by counting the total number of students listed in the school register in a grade by gender in that month. The average monthly attendance rate was calculated by first computing the average number of attendees on a school day in that month (by grade and gender) or the average monthly attendance level. This was obtained by summing the total number of attendees on each school day in that month and dividing it by the total number of days school was held in that month. The average monthly attendance rate then is the average attendance level over the enrolment level in that month (in percentage terms).

Besides the participation data, information was gathered on the timing of the transition from monthly distribution of raw food grains to daily provision of cooked meals on school premises. Of the 64 public primary schools, 41 schools implemented the cooked school meal programme after July and before December 2003 (22 implemented the programme in August, seven in September, nine in October and three in November 2003). These schools were distributing raw food grains in July and transitioned to serving cooked meals before December. The remaining 23 schools did not change their implementation status during this period. This group includes 17 schools which implemented the cooked meal programme in July and continued providing cooked meals through December. Six schools did not have a cooked school meal programme in either July or December. Of these, three schools were not serving cooked meals in either month but were distributing food grains and three schools were not even distributing food grains. Details on the number of teachers and physical infrastructure, such as functional toilet and drinking water facility, were also obtained for each school in January and February 2004.”

Farzana Afridi (2011). The Impact of School Meals on School Participation: Evidence from Rural India, *The Journal of Development Studies*, 47:11, 1636-1656, DOI: [10.1080/00220388.2010.514330](https://doi.org/10.1080/00220388.2010.514330).

1. What factors might explain low levels of school participation in rural India? (3 points)

---

---

---

---

---

---

---

---





3. Which empirical method could attempt to analyze the causality mentioned in this study? If relevant, provide a formula seen in class. **(5 points)**

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

4. Why did the researcher collect “details on the number of teachers and physical infrastructure”? **(4 points)**

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---



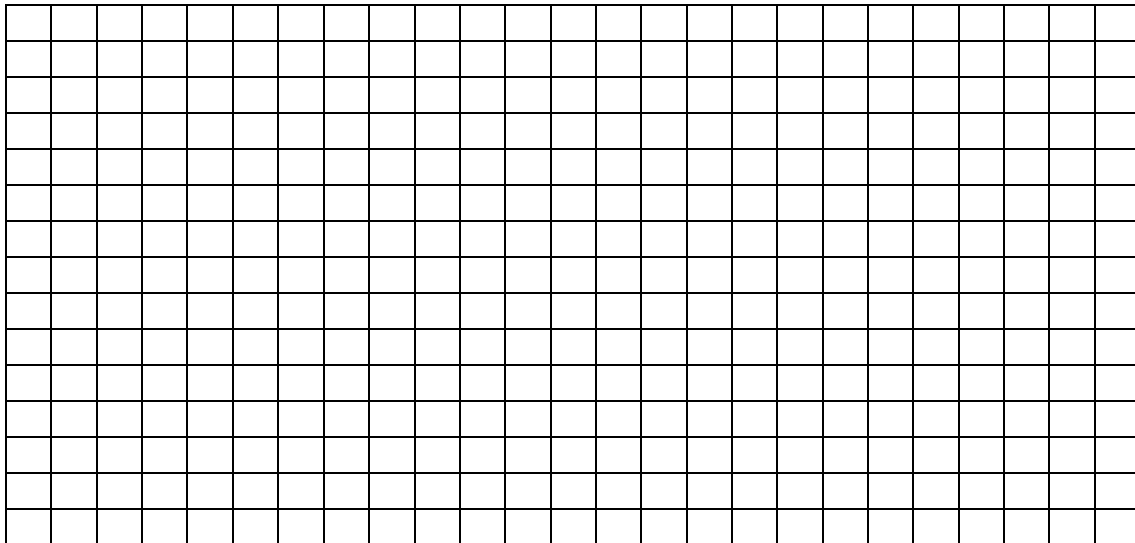
## PARTIE D : EXERCICES (20 points)

### Exercise: Marginal utility and maximization

People have always had strong feelings about economics! The following table shows Stephanie's satisfaction as a function of the number of hours she spends studying microeconomics at home.

<i>H</i>	0	1	2	3	4	5	6	7
<i>S</i>	0	15	25	30	33	31	25	17
<i>Sm</i>								

- *H* designates the number of hours she spends studying microeconomics.
  - *S* designates the total satisfaction that Stephanie feels as a function of the number of hours she spends studying microeconomics.
  - *Sm* designates Stephanie's marginal satisfaction.
1. Draw Stephanie's satisfaction as a function of the number of hours she spends studying microeconomics. (4 points)



2. Comment on the graph you drew. (2 point)

---



---



---



---



---



---

3. Calculate Stephanie's marginal satisfaction (you can directly fill-in-the-blanks in the table above). Draw her marginal satisfaction on the graph of question 1. What can you say about the graph now? **(6 points)**

---

---

---

---

---

---

---

---

4. Let's assume that studying microeconomics does not generate any cost. According to what you know about her preferences, when should Stephanie stop studying microeconomics? Apply the economic reasoning covered in class, and give a numerical answer (an approximation is expected). **(4 points)**

---

---

---

---

---

---

---

---

---

---

5. Let's assume now that the cost of studying microeconomics is 5 per hour. For how many hours will Stephanie wish to study microeconomics? **(4 points)**

---

---

---

---

---

---

---

---





