Midterm II Information and Sample Questions

Midterm II will be on Wednesday, November 18\textsuperscript{th}. Please arrive at least a few minutes early; the test will begin promptly at 4:00PM.

The test is closed book, closed note and no calculators are allowed. I recommend you review lecture notes (through November 11\textsuperscript{th}), recitation notes, the relevant textbook chapters, and homework. Refer to the Principle Topics for Midterm II sheet for an outline of possible topics.

The below midterms should only be taken as \textbf{examples} of possible questions, of course I can ask questions not listed here.
Practice Midterm II: No. 1
75 minutes
Econ 1101: Principles of Microeconomics

Name: _______________________________________________

Section Number: ________________________________

On the following pages, please show all of your work.
If you need more space, use the back of the page. Clearly state where your work/answer is.
Clearly highlight/circle solutions.
Calculators are NOT allowed. You may leave answers as fractions.
Fully label all graphs.
Read each question carefully and be sure to answer all parts of every question.
There are a total of 100 points possible on this test.
Question 1:

(a) Briefly discuss the difference between “accounting profits” and “economic profits.”

(b) Define “diseconomies of scale” (you can give either of the two equivalent definitions).

Question 2: Consider an economy with two agents, Argentina and Brazil. The economy only produces two goods, coffee and sugar. Argentina and Brazil can produce the goods as follows:

<table>
<thead>
<tr>
<th></th>
<th>Coffee</th>
<th>Sugar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>4 hours/unit</td>
<td>2 hours/unit</td>
</tr>
<tr>
<td>Brazil</td>
<td>6 hours/unit</td>
<td>4 hours/unit</td>
</tr>
</tbody>
</table>

(a) Fill in the following table, computing the opportunity cost of production of each good for each country:

<table>
<thead>
<tr>
<th></th>
<th>Coffee</th>
<th>Sugar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) Who has the absolute advantage in the production of coffee? Why?
(c) Who has the comparative advantage in the production of coffee? Why?

(d) Consider the price of coffee in terms of sugar. What is the highest price at which coffee can be traded that would make both countries better off? What is the lowest price? Explain.

Question 3: Linda only consumes red pens and pencils. Linda has $20. Red pens cost $1.00 and pencils cost $0.50.

(a) Draw Linda’s budget constraint and her optimal consumption bundle (put pencils on the y-axis, assume Linda has preferences like those drawn in class).

(b) Suppose Linda’s income increases to $30. Draw Linda’s new budget constraint on the above diagram.

(c) Linda’s Income Elasticity of Demand (IED) for pencils is -0.5. Her IED for red pens is 0.75. Draw Linda’s new optimal consumption bundle keeping this information in mind.
**Question 4:** Consider an economy with two agents, Minnesota and Illinois. The economy only produces two goods, soybeans and sugar beets.

Each state has **40 hours**. The PPF for each state is given:

(a) Fill in the following table, computing the **opportunity cost** of production of each good for each state (be sure to include units):

<table>
<thead>
<tr>
<th></th>
<th>Soybeans</th>
<th>Sugar Beets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minnesota</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illinois</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) Who has the comparative advantage in the production of soybeans? Why?

(c) Who has the absolute advantage in the production of soybeans? How can you tell?
(d) If trade were to take place, which state would specialize in the production of each good?

(e) Consider the price of soybeans in terms of sugar beets. What is the highest price at which soybeans will be traded? What is the lowest price? Explain.

Now, suppose the above PPF’s were drawn given that Minnesota only has 5 hours, Illinois has 40 hours. With this information answer (f), (g), (h).

(f) Who has the comparative advantage in the production of soybeans? Explain.

(g) Who has the absolute advantage in the production of soybeans? How can you tell?

(h) If trade were to take place, which state would specialize in the production of each good?
Question: Consider a firm in a perfectly competitive market that should produce a positive quantity in the short-run, but is still earning a loss.

(a) Using the market diagram given below, draw the cost curves (ATC, AVC, MC, MR) for the firm just described. Clearly label the quantity this firm would produce. Label the loss the firm would incur.
Practice Midterm II: No. 2
75 minutes
Econ 1101: Principles of Microeconomics

Name: ____________________________________________________________

Section Number: __________________________________________________

On the following pages, please show all of your work.
If you need more space, use the back of the page. Clearly state where your
work/answer is.
Clearly highlight/circle solutions.
Calculators are NOT allowed. You may leave answers as fractions.
Fully label all graphs.
Read each question carefully and be sure to answer all parts of every question.
There are a total of 100 points possible on this test.
**Question 1:** Consider a firm in a perfectly competitive market that is earning a profit.
(a) Draw the cost curves (ATC, AVC, MC, MR) for this firm. Clearly label the quantity this firm will produce. Clearly label the profit this firm earns.

(b) On the above diagram draw in a new MR curve, labeled $MR_{ShutDown}$, such that if the above firm faced this $MR_{ShutDown}$ it would shut down (not produce) in the short-run.

**Question 2:** Consider a consumer, Linda. Suppose Linda only consumes pencils and markers. Linda has $90. Pencils cost $2.00 and markers cost $3.00.

a) Draw Linda’s budget constraint and her optimal consumption bundle (assume Linda has preferences like those drawn in class – follow the rules) putting markers on the y-axis.
(a) Suppose Linda’s income decreases to $60. Draw Linda’s new budget constraint on the above diagram.
(b) Suppose markers are inferior goods and pencils are normal goods. Draw Linda’s new optimal consumption bundle keeping this information in mind.

**Question 3:** Suppose Sara’s income is $60. Only two goods exist for Sara, junk food and gasoline. Junk food costs $3 per unit and gasoline costs $2 per unit.

(a) Construct Sara’s budget constraint (put junk food on the Y-axis).
(b) Illustrate Sara’s optimal consumption bundle (using indifference curves like those seen in class).

(c) Now suppose the price of gasoline increases to $4 per unit. Assume that junk food and gasoline are both normal goods for Sara. Using this information, graphically illustrate the effects of this price change using the diagram above. Clearly illustrate the income and substitution effects.

(a) What is Sara’s Marginal Rate of Substitution of junk food for gasoline at her initial OCB?
(b) What is Sara’s Marginal Rate of Substitution of junk food for gasoline at her final OCB?

**Question 4:** Consider the following relationship between output $Q$ and Total Cost.

<table>
<thead>
<tr>
<th>$Q$</th>
<th>$TC(Q)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>27</td>
</tr>
</tbody>
</table>

(a) Give the Marginal Cost of producing $Q=1$, $Q=2$ AND $Q=3$.

We know that the production process underlying the above TC table only uses labor. We also know that each unit of labor costs $3 per unit.

(b) Using the information above fill out the following table (how many units of labor (L) are necessary to produce a given level of output (Q))?.
(c) Give the Marginal Product of Labor of going from the first to second row, second to third row, and third to fourth row.

(d) Does this production technology exhibit diminishing marginal product of labor? Explain.

**Question 5:** Consider the following production possibilities table of a government:

<table>
<thead>
<tr>
<th></th>
<th>Guns</th>
<th>Butter</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>B</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>C</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>D</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>E</td>
<td>0</td>
<td>8</td>
</tr>
</tbody>
</table>

(a) Draw this PPF, putting Guns on the y-axis.

(b) Compute the opportunity cost of guns between A and B.

(c) Compute the opportunity cost of butter between A and B.
(d) Briefly explain the intuition behind why we would expect a PPF to have the shape of the PPF in part (a).