The rules for problem sets in this course are that [1] you should feel free to discuss the problems with others, but [2] in the end you must write up your own results.

This problem set is due Monday, September 24, at the beginning of lecture. No late assignments accepted. Problem sets will be due every Monday lecture, except as announced.

Note: sections will meet this week, beginning Wednesday, September 19.

1. Give your name, the name of your Teaching Fellow and the time of your assigned section.

2. Define the following terms

   (a) Change in Quantity Demanded
   (b) Opportunity Cost
   (c) Equilibrium
   (d) Marginal Benefit

3. You have some experience with the market for textbooks. Draw carefully labeled supply and demand graphs showing how the price and quantity of textbooks sold would change if

   • The Yale entering class was particularly large.
   • The financial aid office failed to process many financial aid checks.
   • The state placed a new tax, paid by bookstores, on textbook sales.

4. Fill in the following table with your predictions for quantities sold in the market if both the supply and demand curves shift at the same time. For example, in the Up-Up box consider a simultaneous shift upwards in supply and demand and indicate whether quantity would increase (+), decrease (−) or whether the effect is unknown (?).

<table>
<thead>
<tr>
<th>Predictions for Q</th>
<th>Demand</th>
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<tbody>
<tr>
<td></td>
<td>Up</td>
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<td>Down</td>
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<tr>
<td>Supply</td>
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<td>Up</td>
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5. Consider the demand function: \( Q = a - p \); and the supply function: \( Q = b + dp \) where \( a \), \( b \) and \( d \) are constants.

(a) What is the formula for the elasticity of demand?
(b) At what price is the elasticity of demand equal to (minus) one?
(c) What is the equilibrium price in the market?
(d) What is the equilibrium price if the suppliers must pay a tax of \( t \) per unit sold?
(e) What is the equilibrium price if the consumers must pay a tax of \( t \) per unit sold?

6. Consider rent control laws.

(a) Using a graph, illustrate the effect on the housing market of a law that sets a maximum rental price that is below the market equilibrium rent.

(b) Who benefits from the law (as compared to a deregulated market where price is at its equilibrium level)? Who loses?