1. A prestigious economics department has been awarded 3 parking spots in the “coolest” parking lot. This means that the department can sell 3 parking permits to its members and do with the money what it pleases. Unfortunately, there are 6 professors in the department wanting to park in the desired parking lot. The 6 professors differ in their names, their willingness to pay and in their seniority (the length of time they have belonged to the department). The relevant information is given in the following table.

<table>
<thead>
<tr>
<th>Name</th>
<th>Willingness to pay</th>
<th>Seniority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rhea Tards</td>
<td>200</td>
<td>10</td>
</tr>
<tr>
<td>Joe D. Mand</td>
<td>190</td>
<td>12</td>
</tr>
<tr>
<td>Juan A. Trade</td>
<td>180</td>
<td>15</td>
</tr>
<tr>
<td>Lou R. Price</td>
<td>180</td>
<td>14</td>
</tr>
<tr>
<td>R. Ann Dee</td>
<td>160</td>
<td>16</td>
</tr>
<tr>
<td>Marv Allous</td>
<td>150</td>
<td>5</td>
</tr>
</tbody>
</table>

(a) If the department allocated the parking permits according to the competitive equilibrium, what would the equilibrium price and quantity be?

(b) Who would buy the permits and who would not?

(c) What would the consumer surplus be of each of the faculty members?

(d) What would the revenues accrued to the department be?

(e) What would happen to the equilibrium if the university decided to tax the permit holders $5 per permit? Will the professors be hurt by such a measure? Will the department’s revenues change as a result?

It was argued in a faculty meeting that the competitive equilibrium shows no respect for seniority, and further, that the competitive price is outrageously high. As a result, the department decided to lower the price of a parking permit to $100 and to allocate them according to seniority: faculty with more seniority have priority; if a “younger” faculty member wants a parking permit, he should wait until a more senior faculty member holding a permit retires.

(a) What faculty members will get a permit?

(b) What is the consumer surplus of each of the faculty?

(c) What is the revenue that accrues to the department?

(d) Find a mutually beneficial trade between a permit holder and a permitless faculty member.

(e) Does the new seniority-based allocation mechanism result in an efficient allocation of permits?

2. Ronelio has $10 to spend in olives and beer. The price of beer is $2 per glass and the price of olives is $1 per portion. For Ronelio, beer and olives are perfect complements: he likes to consume exactly one portion of olives with each glass of beer he drinks.
(a) Draw Ronelio’s budget.
(b) Draw a couple of Ronelio’s typical indifference curves
(c) Find Ronelio’s optimal bundle of olives and beer.

The government imposed a quantity tax of $1 on each portion of olives.

(a) What is Ronelio’s new budget?
(b) What is Ronelio’s new optimal bundle?
(c) What is the total amount of money that the government gets from Ronelio’s taxes?