1. The government is thinking of building a new third bridge crossing the Bosphorus, over which individuals with very different valuations would travel. For simplicity there are three types of people who use the bridge and that there are 100,000 people from each type. The valuation of a typical type A is such that the benefit they get is 500 TL worth. The benefit type B gets is 250 TL worth, and the benefit C gets is 200TL worth.
   a. What is the price the society is willing to pay to build this bridge?
   b. Suppose it costs 100 million TL to build this bridge, should the government build it or not? What is the net benefit to the society?
   c. The government is debating alternative ways to pay for this bridge. Discuss how the public would vote and whether the proposed financing plan would actually be accepted unanimously by every individual in Istanbul (the 300,000 people including all types A, B and C)
      i. The government proposes an equal tax of 300TL for each of these 300,000 citizens, regardless of their type.
      ii. The government proposes a fee for use, where every person who accesses the bridge should pay a lump-sum amount of 500TL.
      iii. The government proposes a fee for use, where every person who accesses the bridge should pay a lump-sum amount of 200TL.
   d. Discuss the free-rider problem that could be evident in the following possibility:
      “The government decides to ask for voluntary donations, where individuals contribute to the financing by any amount they will to.”

2. Classify the following goods according to their excludability and rivalry criteria:
   a. Audio and video broadcasting with no-commercials
   b. Books at public libraries
   c. Hamburgers
   d. Internet services
   e. Dolmuş rides

3. Ali has an income of 88TL. The price of a kg of oranges is 4TL while the price of a bottle of shampoo is 8TL. You are given the following utility schedule for Ali.

<table>
<thead>
<tr>
<th>Q of oranges</th>
<th>Total utility from oranges</th>
<th>Q of shampoo</th>
<th>Total utility from shampoo</th>
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<tr>
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<td>0</td>
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<tr>
<td>2</td>
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<td>4</td>
<td>92</td>
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</tbody>
</table>
| 3            | 39                        | 6            | 132}
a. Find the utility maximizing combination of oranges and shampoos Ali will want to consume.

b. Assume that Ali’s income increases to 128TL. Find the new optimal consumption bundle for Ali.

c. Assume Ali’s income remains at 88TL while the price of a bottle of shampoo increases to 12. Find the new optimal consumption bundle for Ali.

d. Draw Ali’s demand curve for shampoo. Show how the demand curve shifts (numerically) when Ali’s income increases.

e. What can you say about the type of goods: are oranges and shampoo substitutes or complements? Are oranges and shampoos normal or inferior goods?