Question 1: School Finance
Do two out of the following three questions: 4, 5, 6 in O'Sullivan, page 648.

Question 2: Competition for Business
Consider a set of businesses deciding whether to locate a plant in Richfield or Eden Prairie. The businesses vary in a parameter \( x \). Businesses with low \( x \) prefer Richfield, those with a high \( x \) prefer Eden Prairie, tax considerations the same. Formally, a business of type \( x \) suffers a disutility of 25\( x \) dollars to go to Richfield and a disutility of 25(1 - \( x \)) to go to Eden Prairie (so this is like a transportation cost of $25 per unit). The distribution of \( x \) is uniform over \( x \in [0, 1] \).

Suppose that marginal cost to either city of attracting a business is $10. This cost includes building infrastructure, maintaining fire protection, etc.

The cities pick taxes first, and then businesses decide which city to locate in.

(a) Suppose that the cities can discriminate and offer a tax based on the business characteristic \( x \). Let \( t_1(x) \) be the tax offered to type \( x \) by Richfield, and let \( t_2(x) \) be the tax offered to the same type by Eden Prairie. What is the equilibrium of tax competition. How much revenue does each city collect? What is the net “profit” of each city (i.e. tax revenue net of costs).

(b) Suppose the Burstein-Rolnick proposal is passed that requires \( t_1 \) to be constant for all \( x \) and \( t_2 \) to be constant for all \( x \). Thus each city can attract more businesses by lowering taxes, but a city has to offer the same rate to every business. What is the equilibrium of tax competition in this case? How does the Burstein-Rolnick policy affect city revenue compared to what happens in (a)?

(c) Continue to assume that the cities offer the same tax rate to everyone as in (b). Suppose in addition to the city tax solved from (b), the firms have to pay a state tax of $50. Suppose there is a tax increment financing program (TIF) in the state that works as follows. The city gets a loan of $50 and uses the $50 to pay some of the construction cost for any of the new firms that locate in the city. The $50 that would have be used to pay the $50 state tax does not go to the state. Rather it goes to the city so it can pay off the $50 loan. This is only in the first year. After the first year, the loan is paid off, and the $50 state tax goes to the state.

(c1) Will the cities have an incentive to use the TIF program?
(c2) Does the TIF program benefit the state in any way?
(c3) Will the cities benefit from the TIF program? Will the firms benefit?
(c4) If this example makes the TIF program look good, can you think of any limitation of the TIF program that this example is missing. If this example makes the TIF program look bad, can you think of any potential benefit to the state or the cities from the TIF program that this example is missing?