HW 7.1

Friday, October 23, 2020 7:58 PM

Passed solution review

1. Recall exercise 1 from Chapter 5 in which an increase in the toll on a highway from $.40 to $.50 would reduce use of the highway by 5,000 cars per week.

1. Suppose the government is considering an increase in the toll on a certain stretch of highway from $.40 to $.50. At present, 50,000 cars per week use that highway stretch; after the toll is imposed, it is projected that only 45,000 cars per week will use the highway stretch.

   Assuming that the marginal cost of highway use is constant (i.e., the supply curve is horizontal) and equal to $.40 per car, what is the social change in surplus attributable to the increase in the toll? (Hint: the toll increase will cause the supply curve, not the demand curve, to shift.)

a. Because of the reduced use of the highway, demand in the secondary market for subway rides increases. Assuming that the price of subway rides is set equal to the marginal cost of operating the subway and marginal costs are constant (i.e., the supply schedule is horizontal), and no externalities result from the reduced use of the highway and the increased use of the subway, are there additional costs or benefits due to the increased demand for subway rides? Why or why not?

Because the subway costs are constant and do not change with increased ridership, the cannot be counted as a benefit or a cost.

b. Because of the reduced use of the highway, demand in the secondary market for gasoline falls by 20,000 gallons per year. There is a stiff tax on gasoline, one that existed prior to the new toll. Assuming that the marginal cost of producing gasoline is $1 per gallon, that these marginal costs are constant (i.e., the supply schedule is horizontal), that no externalities result from the consumption of gasoline, and that the gasoline tax adds 30 percent to the supply price, are there any additional costs or benefits due to this shift? If so, how large are they?

There are a lot of words here trying to confuse me but I'm not falling for it (famous last words). There are no changes to CS or PS because it's a constant cost industry. But as demand falls, the government loses tax revenue of $(.3 \cdot 20000) = \$6000$ which would affect the total