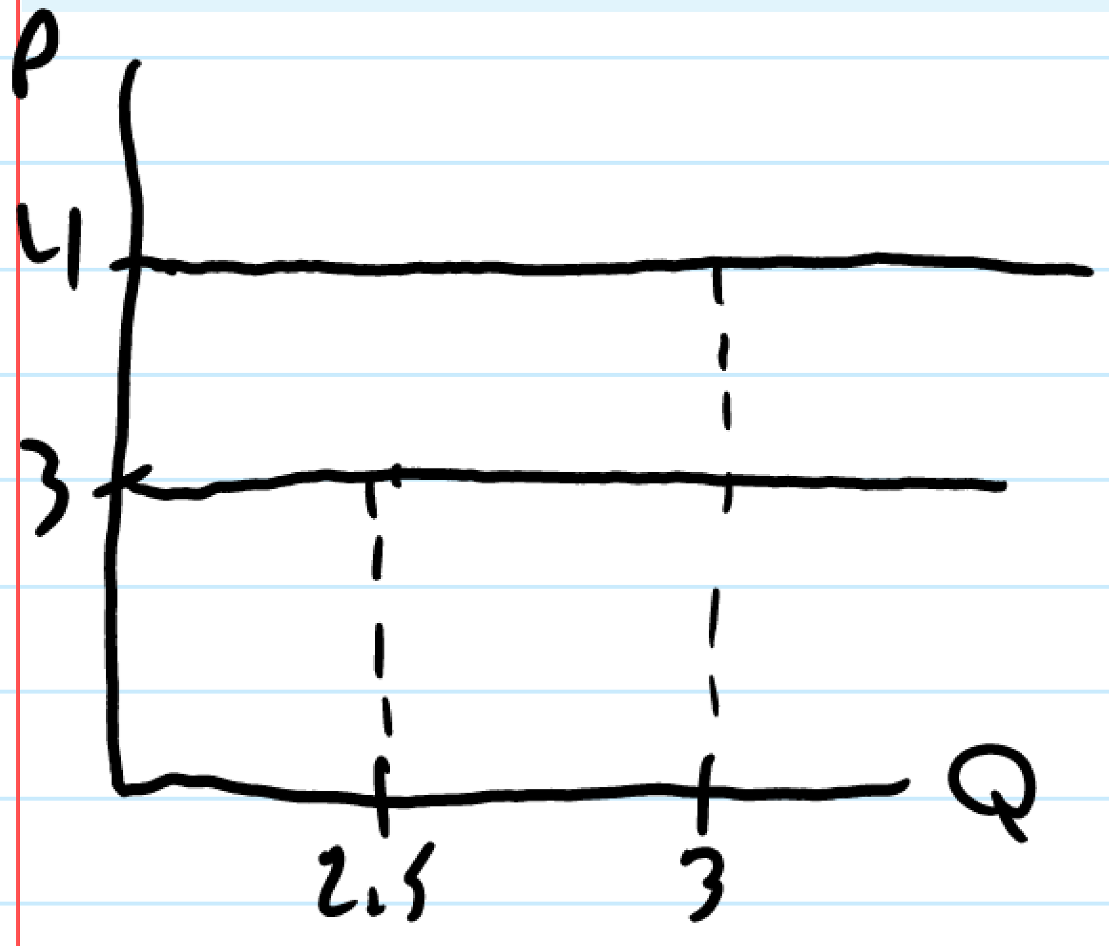
HW 7.3

Friday, October 23, 2020 8:51 PM

Passed solution review

3. Recall exercise 2 from Chapter 5 in which a country imposes an import fee on the crude oil it imports. Imagine that all the crude oil imports to the country are made by ships owned by its nationals. The Association of Petroleum Shippers argues that the reduction in imports resulting from the import fee will drive down the price of shipping services and thereby inflict a loss on them. The Committee for Energy Independence, which favors the import fee, argues that the reduction in shipping prices will benefit consumers of shipping services. Which argument is correct? In preparing an answer, make the following assumptions: the import fee will reduce the quantity of imported crude oil from 3 billion to 2.5 billion barrels per year; the reduction in barrels shipped will drive per-barrel shipping costs down from \$4 per barrel to \$3 per barrel; and the elasticity of demand in the shipping market at the new equilibrium (\$3, 2.5 billion barrels) is −0.3. Also assume that the shipping market is undistorted and that the prices of other goods, including shipping services, were held constant in estimating the demand schedule for crude oil.




The Committee is wrong because net SS will be negative even though ΔCS is positive.

$\Delta PS = (.5 \cdot 1 \cdot .5b) + (1 \cdot 2.5b) = 2.75b$

$-.3 = \frac{dq}{dp} \cdot \frac{p}{q}$

$dq = (-.3)(dP)(q/p)$

$dq = (-.3)(-1)(2.5b)(3) = .25b$

$\Delta CS = (.5 \cdot 1 \cdot .25b) + (1 \cdot 2.25b) = 2.38b$

$\Delta SS = 2.75b - 2.38b = .37b$