

## Chapter 9

1. a. In Figure 3, with no international trade the equilibrium price is  $P_1$  and the equilibrium quantity is  $Q_1$ . Consumer surplus is area A and producer surplus is area B + C, so total surplus is A + B + C.

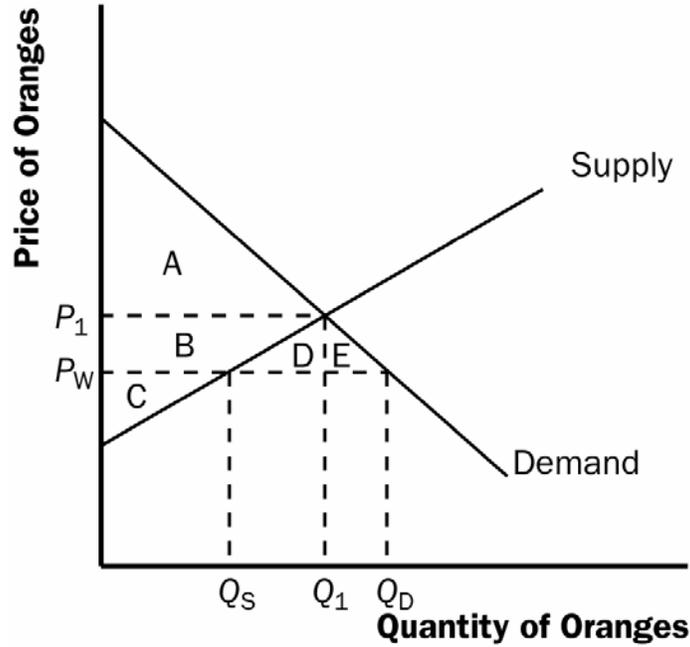


Figure 3

- b. When the U.S. orange market is opened to trade, the new equilibrium price is  $P_w$ , the quantity consumed is  $Q_d$ , the quantity produced domestically is  $Q_s$ , and the quantity imported is  $Q_d - Q_s$ . Consumer surplus increases from A to A + B + D + E. Producer surplus decreases from B + C to C. Total surplus changes from A + B + C to A + B + C + D + E, an increase of D + E.

4. The impact of a tariff on imported autos is shown in Figure 6. Without the tariff, the price of an auto is  $P_W$ , the quantity produced in the United States is  $Q_1^S$ , and the quantity purchased in the United States is  $Q_1^D$ . The United States imports  $Q_1^D - Q_1^S$  autos. The imposition of the tariff raises the price of autos to  $P_W + t$ , causing an increase in quantity supplied by U.S. producers to  $Q_2^S$  and a decline in the quantity demanded to  $Q_2^D$ , thus reducing the number of imports to  $Q_2^D - Q_2^S$ . The table shows the impact on consumer surplus, producer surplus, government revenue, and total surplus both before (OLD) and after (NEW) the imposition of the tariff, as well as the change (CHANGE). Since consumer surplus declines by  $C+D+E+F$  while producer surplus rises by  $C$  and government revenue rises by  $E$ , the deadweight loss is  $D+F$ . The loss of consumer surplus in the amount  $C+D+E+F$  is split up as follows:  $C$  goes to producers,  $E$  goes to the government, and  $D+F$  is deadweight loss.

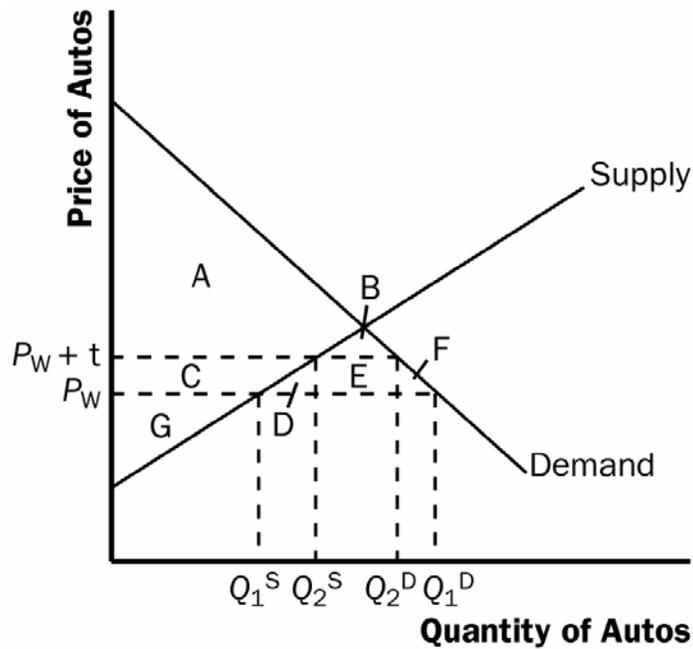


Figure 6

	Before Tariff	After Tariff	CHANGE
<b>Consumer Surplus</b>	$A+B+C+D+E+F$	$A+B$	$-(C+D+E+F)$
<b>Producer Surplus</b>	$G$	$C+G$	$+C$
<b>Government Revenue</b>	$0$	$E$	$+E$
<b>Total Surplus</b>	$A+B+C+D+E+F+G$	$A+B+C+E+G$	$-(D+F)$