1. **Incidence of Commodity Taxation: Heating Oil**

   Consider the heating oil market in New England. Demand is

   $$Q^D = 300 - 40P,$$

   and supply is

   $$Q^S = 20P,$$

   where P is dollars per gallon and Q is thousands of gallons.

   (a) Compute the market equilibrium (price and quantity).

   (b) Now suppose a per–gallon tax of $t = \$3$ is imposed on heating oil. Compute the new equilibrium price paid by consumers P^C, the price received by producers P^S, and the traded quantity.

   (c) Explain the incidence of the tax and the intuition.