Econ 101 | Vignette E4

The Parallel Wandmaker's Dillemma

Suppose the demand for wands is given by

$$P = 100 - Q$$

and there are two main wand sellers, Olivander and Gregorovitch. Olivander can make wands at a constant marginal cost of 10, while Gregorovitch can make wands at a constant marginal cost of 5. The marginal revenue for Olivander is

$$MR_O = 100 - 2q_O - q_G$$

and for Gregorovitch it is

$$MR_G = 100 - 2q_G - q_O$$

Units are in galleons and stones. Calculate the Nash equilibrium level of output for the two wandsellers and put it in the blanks below.

Note. *This Oligopoly is not symmetric. So the trick we used in class won't work here. Simply solve for both firm's optimization decisions separately.*

Q1. Olivarnder's Quantity

What is the Nash equilibrium quantity for Olivander?

Q2. Gregorovitch's Quantity

What is the Nash equilibrium quantity for Gregorovitch?

Q3. Equilibrium Price

What is the Nash equilibrium price in this market?

Q4. Subsidizing Wands

In a highly unethical move, the Ministry of Magic imposed a 10 galleon subsidy on wand sales, ensuring only the wealthiest were able to attend wizarding school. Model this as a 10 galleon increase in the marginal cost of making a wand and find the Nash equilibrium quantity and price after the tax.