

# ECON 0100 | Fall 2024

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## *Demo Z*

This Demo will help you prepare for MiniExam Z, which covers key concepts from Parts A through E. Practice clear and complete answers.

### The Potions Market

Two skilled potion makers, Slughorn and Snape, can each brew different types of potions.

#### Q1 | Production and Trade

In one day, Slughorn can brew 12 sleeping potions (S) or 3 invisibility potions (I), while Snape can brew 6 sleeping potions (S) or 6 invisibility potions (I).

- a) What is Slughorn's opportunity cost of brewing one invisibility potion (*include units*)? \_\_\_\_\_
- b) What is Snape's opportunity cost of brewing one sleeping potion (*include units*)? \_\_\_\_\_
- c) Who has the comparative advantage in brewing sleeping potions (*include units*)? \_\_\_\_\_
- d) Circle all exchange rates that could facilitate trade between the brewers:
  - 1 invisibility potion for 2 sleeping potions
  - 1 invisibility potion for 3 sleeping potions
  - 1 invisibility potion for 4 sleeping potions
  - 1 invisibility potion for 5 sleeping potions

#### Q2 | Market and Externalities

The market for sleeping potions can be represented by:

$$D : P = 100 - Q_B \quad (1)$$

$$S : P = 10 + Q_S \quad (2)$$

- a) What is the market equilibrium quantity? \_\_\_\_\_
- b) What is the market equilibrium price? \_\_\_\_\_

However, brewing sleeping potions releases magical fumes that cause drowsiness in nearby shops, reducing their productivity. This damage is estimated at 15 Galleons per potion brewed.

- c) What is the socially efficient quantity? \_\_\_\_\_
- d) What's the size of the DWL? \_\_\_\_\_
- e) What corrective policy would achieve this quantity? \_\_\_\_\_
- f) What should the size of this corrective policy be? \_\_\_\_\_

### Q3 | Common Resource Problem

The two brewers share access to a magical garden where they gather rare ingredients. Each must decide whether to harvest sustainably or over-harvest. The payoff matrix shows their daily profits in Galleons:

		Snape		
		S	OH	
Slughorn	Sustainable (S)	8, 8	2, 12	(3)
	Over-Harvest (OH)	12, 2	4, 4	

a) What is Slughorn's best response when Snape chooses Sustainable? \_\_\_\_\_

b) What is Slughorn's best response when Snape chooses Over-harvest? \_\_\_\_\_

c) What is/are the Nash Equilibrium/Equilibria? \_\_\_\_\_

d) What is the socially efficient outcome? \_\_\_\_\_

### Q4 | Market Structure

The market for invisibility potions in Britain is currently competitive with many sellers. If several potion makers merge and Slughorn becomes the only seller (creating a monopoly), circle the expected change in each of the following:

**Price:** UP, DOWN, SAME

**Quantity:** UP, DOWN, SAME

**Deadweight Loss:** UP, DOWN, SAME