ECON 0100 | Fall 2024

Vignette B2

Pumpkin pasties are produced by many sellers according to the following supply curve:

$$P = 2 + \frac{2}{3}Q_s \tag{1}$$

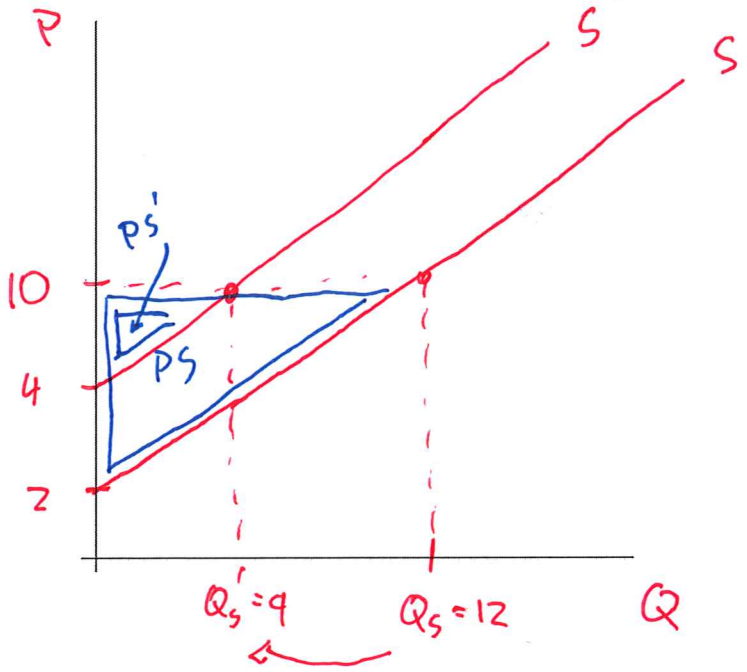
Prices are in galleons and quantity is in thousands of pasties. Use the graphs below to guide your answers.

Q1. Find and plot the quantity supplied at a price of 10 galleons.

$P = 10 = 2 + \frac{2}{3}Q_S$

$8 = \frac{2}{3}Q_S$

$\boxed{Q_S = 12}$



$PS = h \cdot b \cdot \frac{1}{2}$

$= 8 \cdot 12 \cdot \frac{1}{2}$

$= 48$

Q2. Plot and find the area of producer surplus at a price of 10 galleons.

At a price of 10 galleons

Q3. Recent drier growing seasons has made growing pumpkins more difficult, with a new supply curve that can be represented by the following. How has the quantity supplied and producer surplus changed with this change in climate?

$$P = 4 + \frac{2}{3}Q_s \tag{2}$$

$P = 10 = 4 + \frac{2}{3}Q_S$

$6 = \frac{2}{3}Q_S$

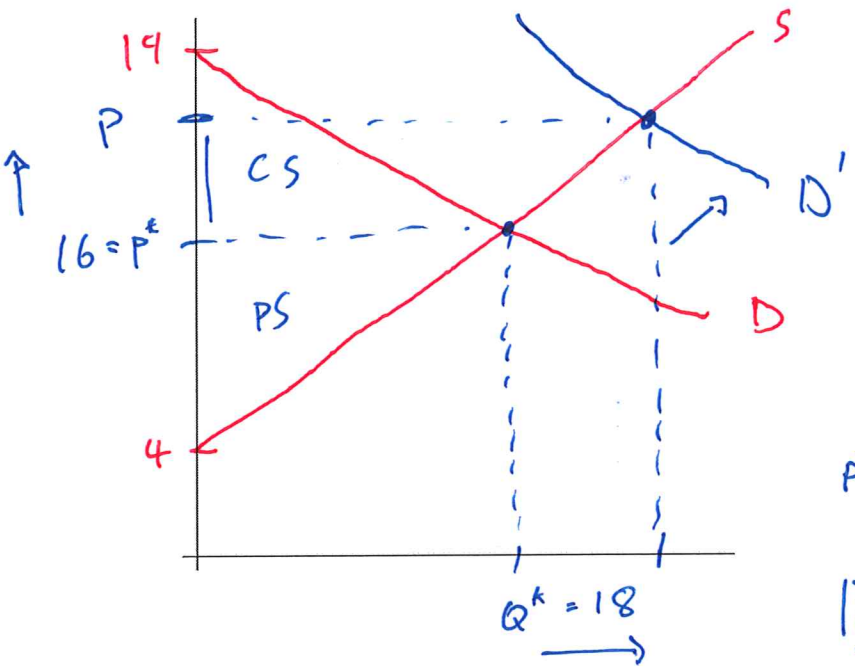
$3 \cdot 3 = 9 = Q_S'$

$PS' = 6 \cdot 9 \cdot \frac{1}{2} = 27$

Q4. Using the supply curve from Q3 and the preferences for pumpkin pasties represented by the following demand curve, find and plot the equilibrium price and quantity for pumpkin pasties.

$$P = 19 - \frac{1}{6}Q_b \tag{3}$$

$P^* \rightarrow Q_s = Q_b = Q^*$



$4 + \frac{2}{3}Q_s = 19 - \frac{1}{6}Q_b$

$\frac{2}{3}Q^* + \frac{1}{6}Q^* = 15$

$\frac{4}{6}Q^* + \frac{1}{6}Q^* = 15$

$\frac{5}{6}Q^* = 15$

$Q^* = 3 \cdot 6 = 18$

$P^* = 4 + \frac{2}{3} \cdot 18$

$= 4 + 12$

$P^* = 16$

Q5. Find and plot the ~~equilibrium price, equilibrium quantity,~~ and the consumer and producer surplus in the market equilibrium you found in Q4.

$CS = 3 \cdot 18 \cdot \frac{1}{2} = 27$

$PS = 12 \cdot 18 =$

Q6. A popular channel on the wizarding social network FlueTube has been promoting pumpkin pasties, leading to a increase in the popularity of the snack. Without using numbers, use the graph above to discuss how the market has been impacted.

$P^* \uparrow$

$Q^* \uparrow$

$PS \uparrow$

$CS \sim ?$