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Tutorial 5:

PART 1:

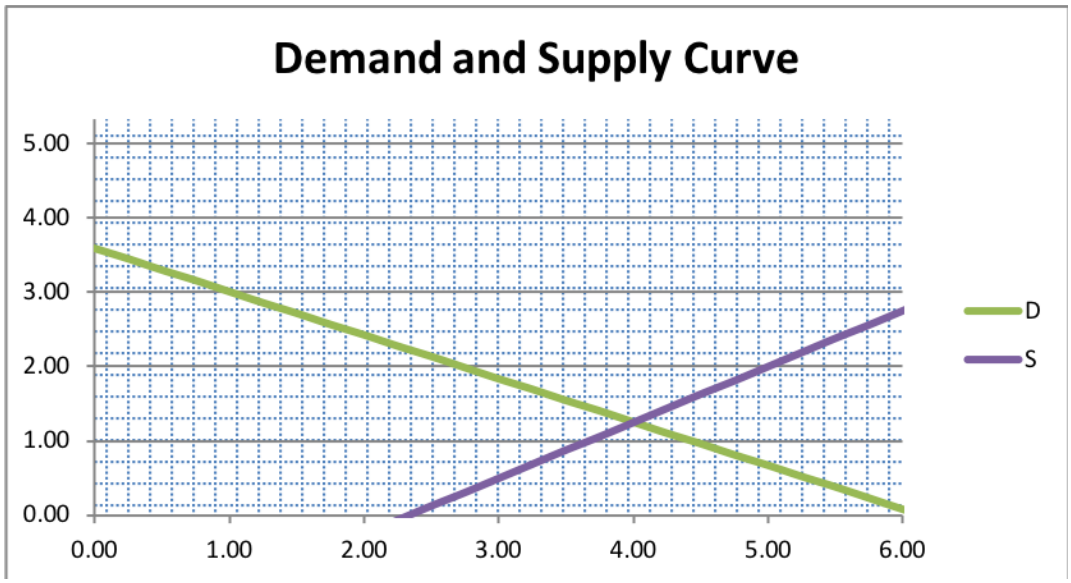
MC1) D - (b) or (c).

MC2) C - 7 units.

PART 2:

Q1. Determine the equilibrium price and quantity - graphically or mathematically

Graphically



- Equilibrium price is where Qs = Qd
- If price were below equilibrium price (p < p*), there would be a shortage which pushes up prices
- If price were above equilibrium price (p > p*), there would be a surplus which pushes down prices
- Equilibrium price (p*) = $1.25
- Equilibrium quantity (q*) = 4

Mathematically

Qd = 6.1432 - p/0.5833
= 6.1432 - 1.714p

Qs = 2.3333 + p/0.75
= 2.3333 + 1.3333p

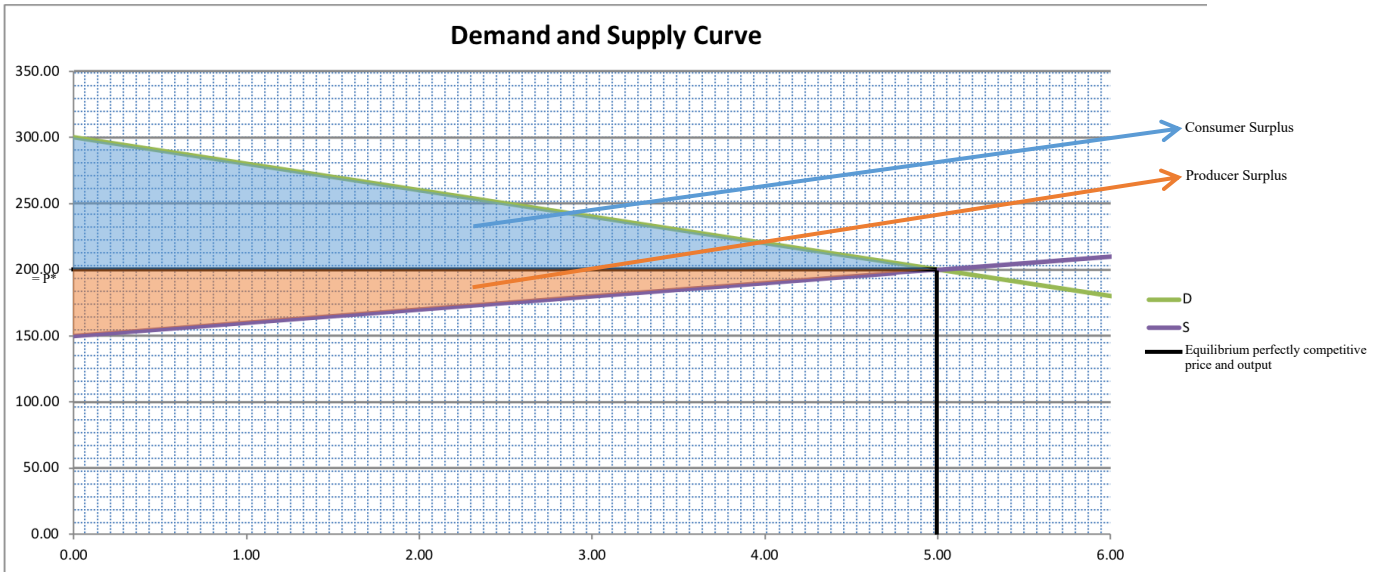
$$2.3333 + 1.3333p^* = 6.1432 - 1.714p^*$$
$$1.3333p^* = 3.809 - 1.714p^*$$
$$3.0473p^* = 3.809$$
$$p^* = 3.809/3.0473$$
$$= 1.25$$

$$Q^* = 6.1432 - 1.25/0.5833 = 4$$

Q2.

1. Inverse demand curve: P = 300 - 20Q

2. Inverse supply curve: P = 150 + 10Q



3. $300 - 20Q^* = 150 + 10Q^*$
   $150 - 20Q^* = 10Q^*$
   $150 = 30Q^*$
   $Q^* = 150/30$
   $= 5$

   inverse demand
   $p^* = 300 - 20Q^*$
   $= 300 - 20(5)$
   $= 200$

   inverse supply
   $p^* = 150 + 10Q^*$
   $= 150 + 10(5)$
   $= 200$

4. Consumer Surplus = $1/2(P^{MAX} - p^*)Q^*$
   $= 1/2(300-200)(5)$
   $= 250$

5. Producer Surplus = $1/2(p^* / P^{MIN})Q^*$
   $= 1/2(200-150)(5)$
   $= 125$

6. Total Surplus = Producer Surplus + Consumer Surplus = 125 + 250 = 375

Q3. Explain how a rise in the price of one good can affect the demand for another good.

Substitute Good = A price increase reduces quantity demanded of a good which **increases** demand for its substitutes . For example, if the price of tea were to increase, the demand for it would decrease and the demand for coffee would increase.

Complement Good = A price increase reduces quantity demanded which **decreases** demand for its complements. For example, if the price of gaming consoles were to increase, the quantity demand for gaming consoles would decrease and the demand for games would decrease.