Example 3.G: Solve for the market equilibrium using the information in **Example 3.E** and **Example 3.F.** Justify your answer!

2 consumers

A : $Q_A = 10 - P$

B : $Q_B = 10 - \frac{1}{2}P$

1 seller

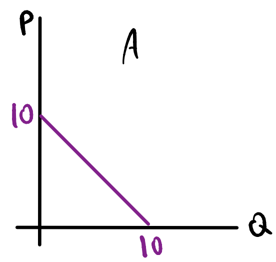
$Q = P$

1) Draw diagram
2) Find equilibrium

Consumer A

$Q = 10 - P$

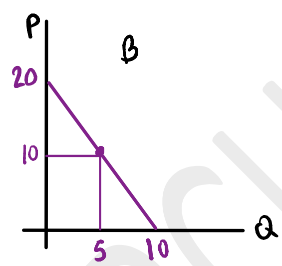
$P = -Q + 10$



Consumer B

$Q = 10 - \frac{1}{2}P$

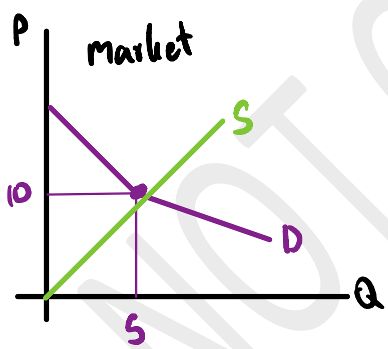
$P = -2Q + 20$



From P=10 to P=20, only B buys.

From $P \leq 10$, both A and B buy.

$$\therefore Q_d = \begin{cases} 10 - \frac{1}{2}P ; & P > 10 \\ 20 - \frac{3}{2}P ; & P \leq 10 \end{cases}$$



equilibrium

$Q_d = Q_s \; ; P > 10$

$10 - \frac{1}{2}P = P$

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

$P = \frac{20}{3}$

$P_1 = 6.67 < 10$

$Q_d = Q_s \; ; P \leq 10$

$20 - \frac{3}{2}P = P$

$\frac{5}{2}P = 20$

$P_2 = 8 \leq 10$

$\therefore$ Equilibrium price is 8.

$\therefore$ Equilibrium quantity is 8.