Answer on Question # 76339, Economics -Microeconomics:

Question: Consider a pure exchange economy with 2 goods (X and Y) and 2 consumers (A and B) having utility functions Consumer A, $u_A = Y_A$, who is endowed with (2, 6) of the commodities; for Consumer B, $u_B = Y_B$ who is endowed with (4, 2) of the commodities.

Compute the market equilibrium price and quantity combinations of the consumers that will result in efficient allocation of resources.

Solution: Here, $X_0^A = 2$, $Y_0^A = 6$ and $X_0^B = 4$, $Y_0^B = 2$.

So, $X_0^A + X_0^B = 6$ and $Y_0^A + Y_0^B = 8$.

Now, market demand is given by,

$$X_A = 1 + 3P$$

$$Y_A = \frac{1}{P} + 3$$

$$X_B = 2 + P$$

$$Y_B = \frac{2}{P} + 1$$

Where, P = price

So, market demand for X is given by,

$$X = 3 + 4P \quad ....(1)$$

Similarly, market demand for Y is given by,

$$Y = 4 + \frac{3}{P} \quad ....(2)$$

Market equilibrium condition for X is given by,

$$3 + 4P = 6$$

$$\text{or, } P = \frac{3}{4}$$

Similarly for Y is given by ,

$$P = \frac{3}{4}$$

Answer: Market equilibrium price for X is $\frac{3}{4}$ and quantity for X is 6.

Market equilibrium price for X is $\frac{3}{4}$ and quantity for X is 8.