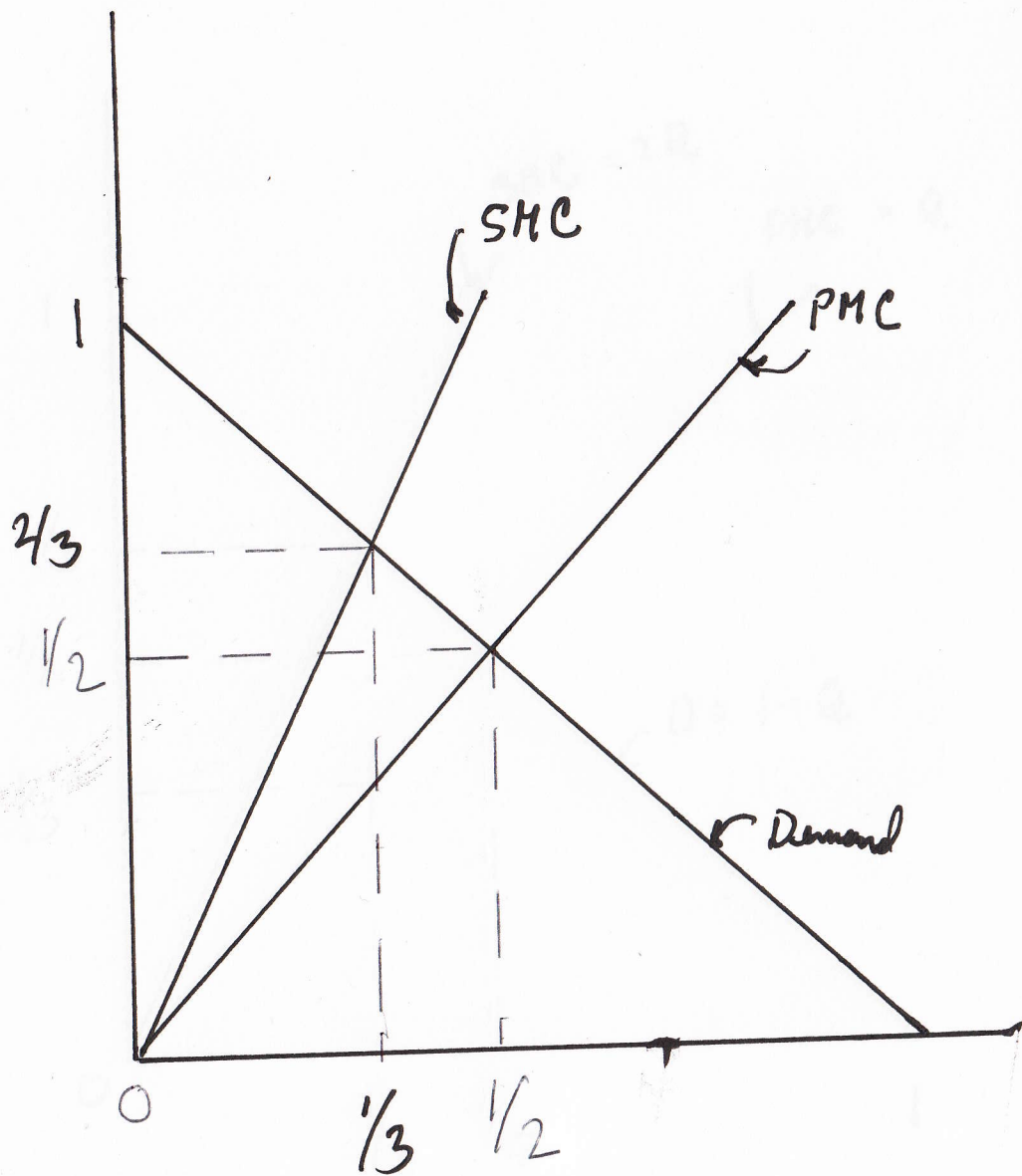


Previous example



$$P(Q) = 1 - Q$$

$$PMC(Q) = Q$$

$$MD(Q) = Q$$

$$SMC(Q) = 2Q$$

$$SMC(Q) = P(Q)$$

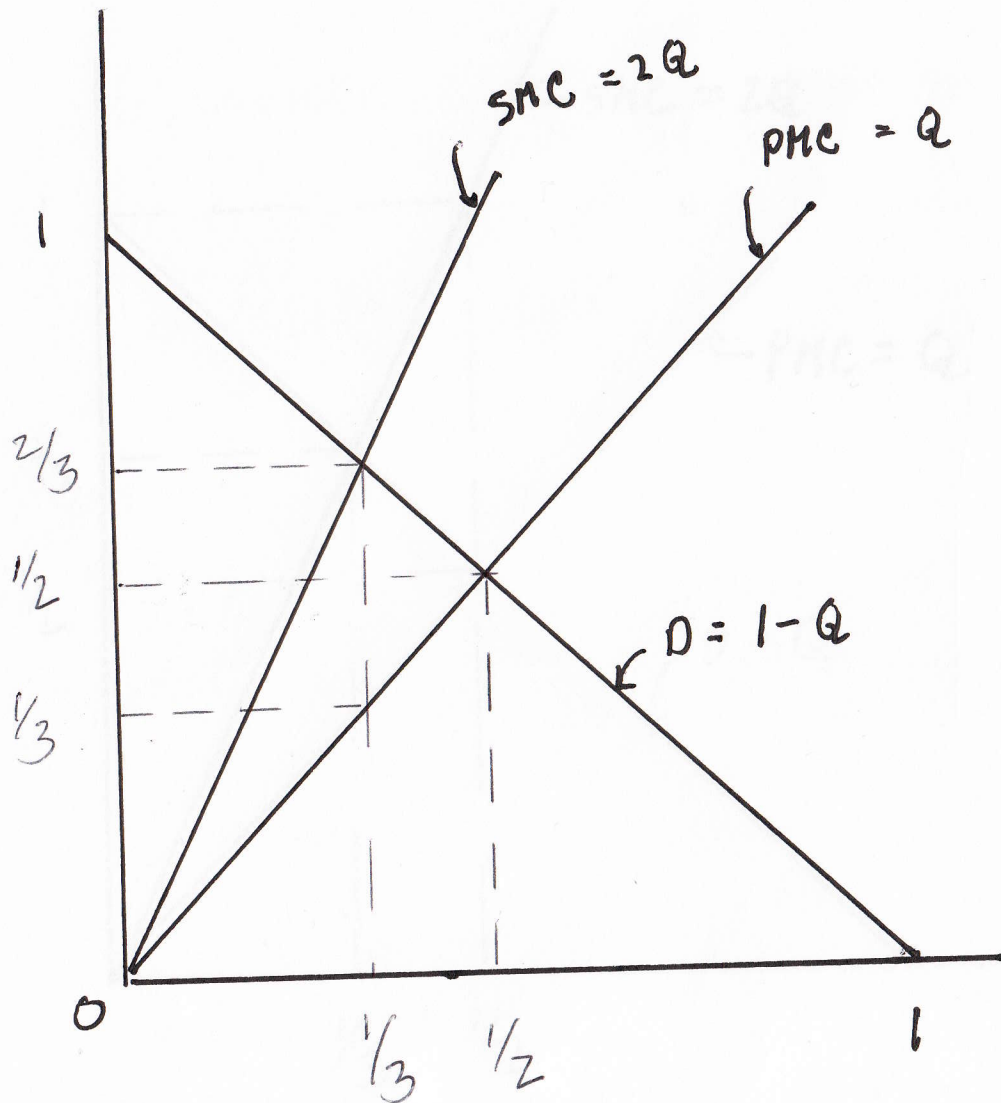
$$2Q = 1 - Q$$

$$Q = \frac{1}{3}$$

$$P = 1 - \frac{1}{3}$$

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

Lost consumer and producer surplus



Use formula for
area of a triangle

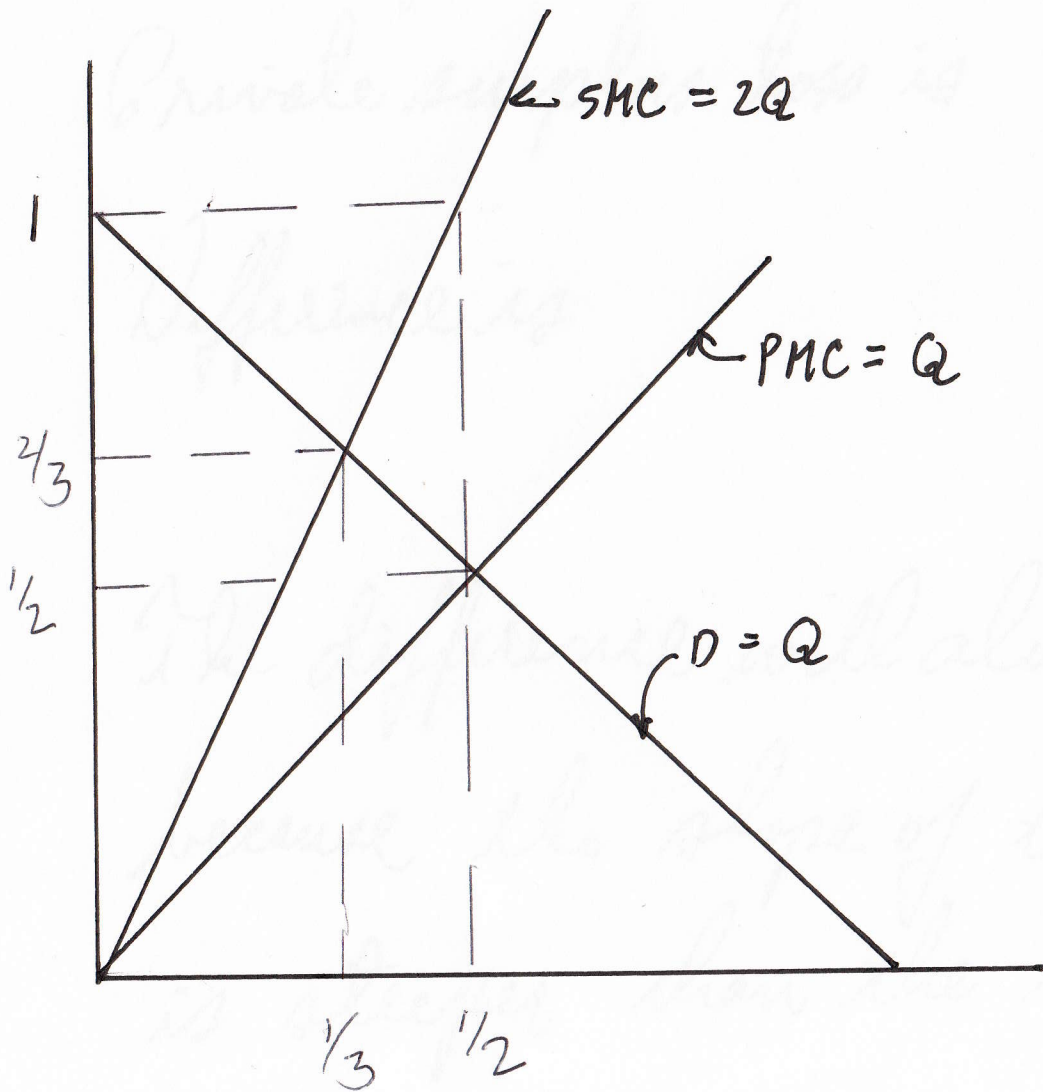
$$\frac{1}{2} \left(\frac{2}{3} - \frac{1}{3} \right) \left(\frac{1}{2} - \frac{1}{3} \right)$$

$$= \frac{1}{2} \left(\frac{1}{3} \right) \left(\frac{3-2}{6} \right)$$

$$= \frac{1}{2} \left(\frac{1}{3} \right) \left(\frac{1}{6} \right)$$

$$= \frac{1}{36}$$

Dead weight loss



$$\begin{aligned} & \frac{1}{2} (1 - \frac{1}{2}) (\frac{1}{2} - \frac{1}{3}) \\ &= \frac{1}{2} (\frac{1}{2}) (\frac{1}{6}) \\ &= \frac{1}{24} \end{aligned}$$

4

Dead weight loss is $\frac{1}{24} = 0.042$

Private surplus loss is $\frac{1}{36} = 0.028$

Difference is

0.014

The difference will always be positive because the slope of the SMC curve is steeper than the slope of the PMC curve