D: $P_D = 10 - Q$ →

MR: $P_{MR} = 10 - 2Q$

S: $P_S = 1 + 3Q$ (mc) →

Monopolist pick a $Q_m^*$

s.t    $MR = MC$

① Graph
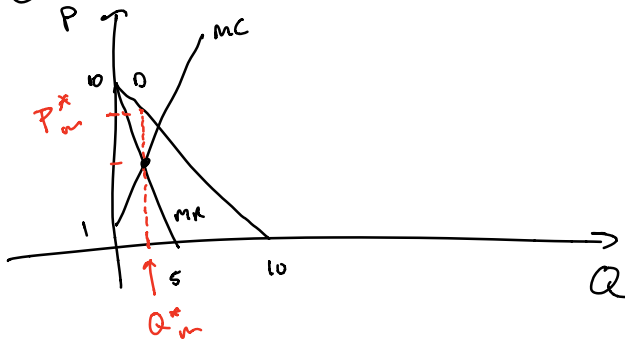


② what is $Q_m^*$ and $P_m^*$?

$$1 + 3Q_m^* = 10 - 2Q_m^*$$

$$5 Q_m^* = 9$$

$$Q_m^* = \frac{9}{5}$$

Plug into demand to get the price

$$P_m^* = 10 - Q_m^* \Rightarrow \boxed{10 - \frac{9}{5}}$$