

**10. Correct. The answer is true.** Solve by setting  $Q_s = Q_d$  and substituting in all the variables that are fixed.

$$\begin{aligned} Q_d &= 100 - 2P_c + 0.5P_{sb} - 3P_{cm} + 0.1Y \\ &= 100 - 2P_c + 0.5 \cdot 15 - 3 \cdot 10 + 0.1 \cdot 100 \\ &= 87.5 - 2P_c \end{aligned}$$

$$\begin{aligned} Q_s &= -10 + 2P_c - 1P_k - 0.2P_l - 0.4P_{nr} \\ &= -10 + 2P_c - 1 \cdot 2 - 0.2 \cdot 3 - 0.4 \cdot 5 \\ &= -14.6 + 2P_c. \end{aligned}$$

Solve  $87.5 - 2P_c = -14.6 + 2P_c$  for  $P_c$ .

$$102.1 = 4P_c \rightarrow P_c = 25.525, Q_o = 87.5 - 2 \cdot 25.525 = 36.450.$$