

31 Correct. The answer is true. For the market prices below \$4, only country 1 can afford to produce. At prices above \$4, country 2 would enter the market and OPEC's marginal cost curve would be the horizontal sum of the two marginal cost curves. To get total MC curve we need to invert these two marginal cost functions

$$Q_1 = -2 + MC_1 \text{ and } Q_2 = -2 + 0.5MC_2.$$

$$\text{When } MC_1 = MC = MC, Q = -2 + MC_1 + (-2 + 0.5MC_2) = -4 + 3/2MC.$$

$$\text{Thus, } MC = 8/3 + 2/3Q.$$

Since total revenues are

$$TR = P \cdot Q, \text{ and } P = 10 - 0.5Q, TR = 10Q - 0.5Q^2, MR = 10 - Q.$$

$$\text{Setting } MR = MC, 10 - Q = 8/3 + 2/3Q,$$

$$\text{we get } Q = 4.4 \text{ and } MC = 5.6. Q_1 = -2 + MC_1 = -2 + 5.6 = 3.6$$

$$\text{and } Q_2 = -2 + 0.5MC_2 = -2 + 0.5 \cdot 5.6 = 0.8.$$

Therefore, the high cost country is producing much less than the low cost country.