

- Consider the following reaction.



An equilibrium mixture in a 1.00 L vessel was found to contain  $[\text{SO}_2(\text{g})] = 0.800 \text{ M}$ ,  $[\text{NO}_2(\text{g})] = 0.100 \text{ M}$ ,  $[\text{SO}_3(\text{g})] = 0.600 \text{ M}$  and  $[\text{NO}(\text{g})] = 0.400 \text{ M}$ . If the volume and temperature are kept constant, what amount (in mol) of  $\text{NO}(\text{g})$  needs to be added to the reaction vessel to give an equilibrium concentration of  $\text{NO}_2(\text{g})$  of  $0.300 \text{ M}$ ?

**Marks**  
**4**

Answer: