- A proposed kinetic model for the reaction of NO(g) with $Br_2(g)$ to form NOBr(g) is as follows. **3**

Step 1 $\quad NO(g) + NO(g) \underset{k_{-1}}{\overset{k_1}{\rightleftharpoons}} N_2O_2(g)$

Step 2 $\quad N_2O_2(g) + Br_2(g) \xrightarrow{k_2} 2NOBr(g)$

If Step 2 is assumed to be very slow compared to the equilibrium of Step 1, derive the overall rate equation you would expect to see for this mechanism.