

b. The entropy change will be very small considering there was no state changes and the number of molecules are the same.

$$c. \Delta G = \Delta H^\circ - T\Delta S^\circ$$

ΔG will be negative because ΔH° is a large negative number and $T\Delta S$ will be a relatively small value so it will not change ΔG greatly (according to the equation above).

d.

$$k = \frac{[NO_2]^2}{[NO][O_2]}$$

for the data NO_2 is second order because it doubles as concentration doubles, the other reactants a first order, because the remain constant.

e. Step III, fits best because it has NO_2 as second order (2 coefficient) and NO as first order.