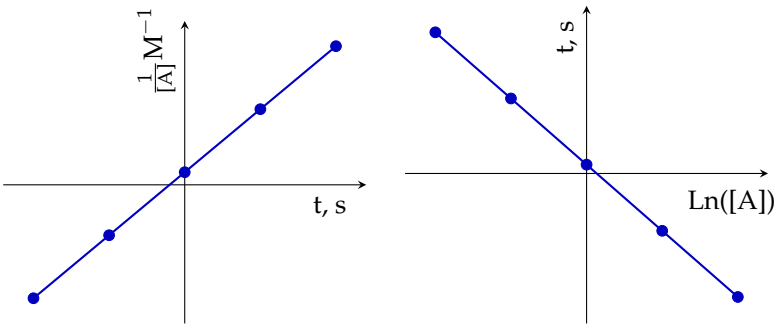
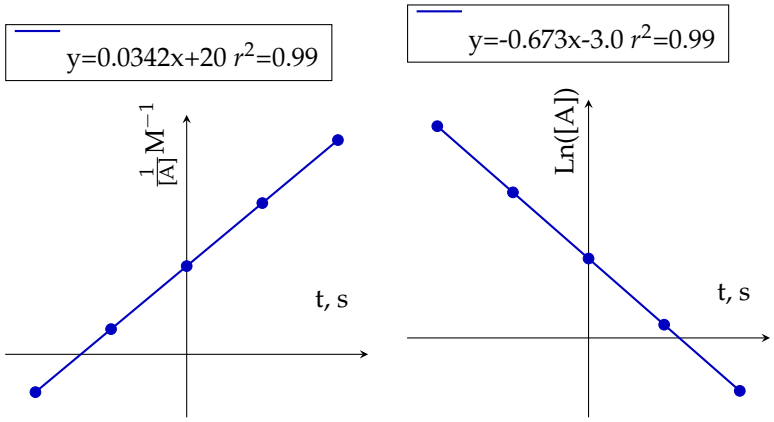
1. **STUDY CHECK**

The following plots results from processing kinetic data by means of the integral method. They are all perfect lines with r^2=0.99. Indicate the order of the reaction.



2. **STUDY CHECK**

The following plots results from processing data by means of the integral method. Interpret the linear regressions and indicate the rate law and the initial concentration of reactants.



3. **STUDY CHECK**

Using the following data, calculate the order and rate constant and write down the rate law.

t (s)	0	6	12	18	24
$[A]$, (M)	1.0000	0.5000	0.2500	0.1250	0.0625

4. **STUDY CHECK**

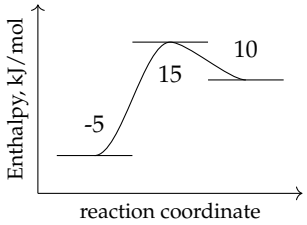
How would the following changes affect the rate of this reaction:

$$2\,H_2(g) + O_2(g) \longrightarrow 2\,H_2O(g)$$

(a) Removing oxygen; (b) Decreasing temperature

5. **STUDY CHECK**

For the energy profile below



Calculate (a) The energy of the reactants (b) The energy of the products (c) The energy of the transition state (d) The activation energy (e) The reaction energy (f) Indicate whether the reaction is endothermic or exothermic

6. **STUDY CHECK**

The Arrhenius parameters for the gas-phase reaction below are 6×10^{-12} s^{-1} and 665J/mol.

$$H_2S + OH \longrightarrow HS + H_2O$$

Calculate: (a) the rate constant at 300K. (b) the temperature at which the rate constant is 5×10^{-12} s^{-1}

7. STUDY CHECK

Using the following data, calculate the Arrhenius parameters (the activation energy and the frequency factor) for the following gas-phase reaction:

$$HS + Cl_2 \longrightarrow ClSH + Cl$$

T (K)	k, (s^{-1})
100	1.1×10^{-15}
200	1.4×10^{-13}
300	6.9×10^{-13}
400	1.5×10^{-12}

8. STUDY CHECK

Using the following data, calculate the Arrhenius parameters (the activation energy and the frequency factor) for the following gas-phase reaction:

$$HS + Cl_2 \longrightarrow ClSH + Cl$$

T (K)	k, (s^{-1})
100	1.1×10^{-15}
200	1.4×10^{-13}
300	6.9×10^{-13}
400	1.5×10^{-12}