**EXCEL PRACTICE FOR THE INTEGRATED RATE LAW**

1. For the reaction 2A 🡪 2B + C, the following data were collected.

[A] (M) t (min)

8.23 x 10-3 10

6.74 x 10-3 20

5.52 x 10-3 30

4.52 x 10-3 40

3.70 x 10-3 50

3.03 x 10-3 60

* 1. Determine the rate law
  2. Calculate [A]0

1. Data for the decomposition of N2O5 in a particular solvent at 45°C are as follows:

[N2O5] (mol/L) t (min)

2.08 3.07

1.67 8.77

1.36 14.45

0.72 31.28

* 1. Plot [N2O5], ln[N2O5], and 1/[ N2O5] versus time, t.
  2. What is the order of the reaction?
  3. What is the rate constant, k, for the reaction?

1. Plot the data and determine the order of the reaction. Determine the rate constant.

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| **Time, s** | **[A], mol L-1** |
| 0 | 0.1000 |
| 5 | 0.0141 |
| 10 | 0.0078 |
| 15 | 0.0053 |
| 20 | 0.0040 |