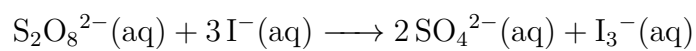


1. Determine the reaction order for the decomposition of  $\text{N}_2\text{O}_5$  and calculate the time  $t$ .

$[\text{N}_2\text{O}_5]_0$ (M)	$[\text{N}_2\text{O}_5]_t$ (M)	$k$ ( $\frac{1}{\text{M}\cdot\text{s}}$ )
0.80	0.22	0.011

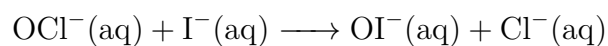
2. Determine the rate law for this reaction. Round orders to the nearest integer.



$[\text{S}_2\text{O}_8^{2-}]_0$ (M)	$[\text{I}^-]_0$ (M)	$v_0$ ( $\frac{\text{M}}{\text{s}}$ )
0.27	0.38	2.05
0.40	0.38	3.06
0.10	0.22	0.44

3. A first-order reaction has 24.0% of its reactant consumed in 19.7 min. Find the rate constant for this reaction, and determine how long will the reaction take to reach 85.5% consumed?

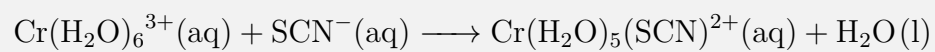
4. Determine the rate law for this base catalyzed reaction. Round orders to the nearest integer.



$[\text{OCl}^-]_0$ (M)	$[\text{I}^-]_0$ (M)	$[\text{OH}^-]_0$ (M)	$v_0$ ( $\frac{\text{M}}{\text{s}}$ )
$1.62 \times 10^{-3}$	$1.62 \times 10^{-3}$	0.52	$3.06 \times 10^{-4}$
$1.62 \times 10^{-3}$	$2.88 \times 10^{-3}$	0.52	$5.44 \times 10^{-4}$
$2.71 \times 10^{-3}$	$1.62 \times 10^{-3}$	0.84	$3.16 \times 10^{-4}$
$1.62 \times 10^{-3}$	$2.88 \times 10^{-3}$	0.91	$3.11 \times 10^{-4}$

**Homework Problem 33**

1. Determine the rate law for this reaction. Round orders to the nearest integer.



$[\text{Cr}(\text{H}_2\text{O})_6^{3+}]_0$ (M)	$[\text{SCN}^-]_0$ (M)	$v_0$ ( $\frac{\text{M}}{\text{s}}$ )
$1.21 \times 10^{-4}$	$1.05 \times 10^{-5}$	$2.11 \times 10^{-11}$
$1.46 \times 10^{-4}$	$2.28 \times 10^{-5}$	$5.53 \times 10^{-11}$
$1.66 \times 10^{-4}$	$1.05 \times 10^{-5}$	$2.82 \times 10^{-11}$
$1.83 \times 10^{-4}$	$3.11 \times 10^{-5}$	$9.44 \times 10^{-11}$