④ $\frac{1}{M \cdot sec} = \frac{1}{\frac{mole}{\ell} \cdot sec} = \frac{\ell}{mole \cdot sec}$

$Rate = K [NO_2]^2$ ← concentration

$\frac{\frac{M}{sec}}{M^2} = K \frac{M^2}{M^2}$

$\boxed{\frac{1}{M \cdot sec} = K}$

Feb 8-8:05 AM

③ $2N_2O_5 \rightarrow 4NO_2 + O_2$

$+\frac{1}{4}\frac{\Delta[NO_2]}{\Delta t} = \frac{+1}{1}\frac{\Delta[O_2]}{\Delta t}$

$\frac{\Delta[NO_2]}{\Delta t} = \frac{4}{1}(2.28)$

Feb 8-8:17 AM

⑤ $\ln A_t = -kt + \ln A_0$

$\ln A_t = -(3.4\times10^{-3})(120) + \ln(0.5)$

2 min

how much (is left) remains after the time (t)

Start − decomposed = left

A_0 A_t

Feb 8-8:20 AM

⑦ $\ln A_t = -kt + \ln A_0$

$\ln \frac{1}{4} = (-5.2\times10^{-3})t + \ln 1$

⑪ $\Delta[\,]$ rate

$1.5^{x} = 2.3$

$\ln 1.5^{x} = \ln 2.3$

$x \ln 1.5 = \ln 2.3$

$x = \frac{\ln 2.3}{\ln 1.5} = 2.054$

Feb 8-8:25 AM

(12) $\ln A_t = -kt + \ln A_0$

$\ln A_t = -(3.4)(1) + \ln 1$ (100% → decimal)

$\ln A_t = -3.4$

$A_t = 0.03337$

3.337%

Feb 8-8:30 AM

(13) $\frac{t_{1/2}}{1} = \frac{0.693}{k}$

$\frac{k}{1} = \frac{0.693}{t_{1/2}} = \frac{0.693}{0.910}$

Feb 8-8:33 AM

(14) $2A + B \rightarrow$ products

$\text{Rate} = k[A]^{2}[B]^{0}$

$1 \rightarrow 2 \quad 2^{2} = 4$

$[\ ]$ Rate

$0.1 \rightarrow 0.2$ 2×10^{-2}

$\times 2$ $\times 4$

4×10^{-2}

$3 \rightarrow 5$

$0.1 \rightarrow 0.3$

$1.8 \rightarrow 1.8$

$[B]^{0}$

$3^{0} = 1$

Feb 8-8:34 AM

(16) $K = 0.92$ $t_{1/2} = \frac{0.693}{K} = \frac{0.693}{0.92}$

$t_{1/2} = 0.75$ sec

$100 \xrightarrow{1} 50 \xrightarrow{2} 25 \xrightarrow{3} 12.5 \xrightarrow{4} 6.25$

3.75 g

5.125 g

Feb 8-8:41 AM

(17) $\frac{1}{A_t} = kt + \frac{1}{A_0}$

90% reacts
10% is left
10% of 0.1

$A_t = 0.01$

$\frac{1}{0.01} = (0.014)t + \frac{1}{0.1}$

$100 = 0.014t + 10$

$90 = 0.014t$

6428.57 sec

Feb 8-8:43 AM

PS 14-2

#1-9, 12, 13, 16→18

Feb 8-8:46 AM