

11.20 a

$$-\frac{1}{2} \frac{\Delta [\text{H}_2\text{O}]}{\Delta t} = \frac{1}{2} \frac{\Delta [\text{H}_2]}{\Delta t} = \frac{\Delta [\text{O}_2]}{\Delta t}$$

[] = concentration (M)

Rate = $\frac{\text{Change in Molarity (concentration)}}{\text{Change in time}} = \frac{\Delta M}{\Delta t} = \frac{dM}{dt}$

Miles / hr

Feb 10-8:04 AM

FACTORY

	<u>2</u> React	→	<u>3</u> Products
Open	100		120
(Change)	-80	2:3	+120
Close	20		120

MOLE RATIO

$$\frac{3}{1} \frac{-1}{2} \frac{\Delta(\text{React})}{\Delta \text{time}} = \frac{1}{3} \frac{\Delta(\text{Prod})}{\Delta t} \times \frac{3}{1}$$

$$\frac{3}{2} \frac{\Delta(\text{React})}{\Delta \text{time}} = \frac{\Delta(\text{Prod})}{\Delta t}$$

$$\frac{3}{2} (80) = 120$$

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Rate \propto [Reactants]

Rate \propto [R₁]^m [R₂]ⁿ

Add a constant \rightarrow We $\Delta \propto$ to =

Rate = k [Reactant]^m [Reactant]ⁿ

$m+n$ (exponents) = Reaction orders

(DATA TABLE!)

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Rate Law

Δ [React] ^{m+n.} exponent Δ (RATE)

1st order 2 1 = 2

2nd order 2 2 = 4

 2 3 = 8

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$$[] \quad \text{Rate.}$$

$$2^{\boxed{x}} = 5$$

$$\ln 2^x = \ln 5$$

$$x \ln 2 = \ln 5$$

$$x = \frac{\ln 5}{\ln 2} = \boxed{2.32} = x$$

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LOG RULES

$$\text{LOG } 10^x \quad \ln x = e^x$$

$$\textcircled{1} \log AB = \log A + \log B$$

$$\textcircled{2} \log \frac{C}{D} = \log C - \log D$$

$$\textcircled{3} \log F^f = f \log F$$

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$$14 / 22 + 30$$

Feb 10-8:46 AM