

Name: _____

Block: _____

Kinetics Problems

The following problems refer to the equations:



1. Which species is an intermediate?

2. If the rate of disappearance of A in reaction (1) is $3 \frac{\text{mol}}{\ell \cdot \text{s}}$ and the rate of disappearance of A in reaction (2) is $8 \frac{\text{mol}}{\ell \cdot \text{s}}$, what is the rate-limiting step in the reaction?



What is the approximate rate of this reaction?

3. If the rate law for equation (1) is:

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

what is the order of reaction (1)?

The following data were collected for the reaction $A + B \longrightarrow C$

Exp't #	[A] (M)	[B] (M)	rate formation of C ($\frac{M}{s}$)
1	0.20	0.10	3×10^{-2}
2	0.20	0.20	6×10^{-2}
3	0.40	0.20	6×10^{-2}

4. What is the rate law for the above experiment?

5. What is the value of k for the above rate law (in the correct units)?