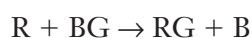


# REACTION MECHANISMS

NAME \_\_\_\_\_

SECTION \_\_\_\_\_

1. Given the chemical equation



Describe the interaction between reactant particles that must occur to convert them to products. You may draw one or more pictures as part of your description.

2. Write the general differential form of the rate law for the reaction above.

3. The following table summarizes several experiments where the concentrations of R and BG were varied to determine the effect on the initial rate of the reaction.

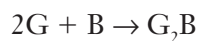
Experiment Number	R (M)	BG (M)	Initial Rate ( $\frac{M}{s}$ )
1	0.240	0.125	$1.85 \times 10^1$
2	0.480	0.124	$3.68 \times 10^1$
3	0.479	0.249	$7.37 \times 10^1$

Determine the rate law for the reaction.

4. How do the exponents in the rate law that was obtained in Question 3 compare to the coefficients in the balanced chemical equation in Question 1?

5. Define the term *reaction mechanism*.

6. a. Optional: Look at the simulation (<http://introchem.chem.okstate.edu/DCICLA/K2GBM.htm>) for the reaction:



The rate law is known to be  $\text{rate} = k[\text{G}]^2$ . Suggest a possible mechanism for this reaction.

- b. Why is B not part of the rate law? (Hint: do all of the steps in a mechanism contribute to the overall rate? Why or why not?)