Module 14 Test Review

Know factors that affect reaction rate and why they affect the rate

Understand what orders are and how a reaction rate changes if a concentration doubled

Know what a catalyst does

Know the two main classifications of catalysts

Be able to write a reaction rate formula for a chemical equation

Be able to calculate the orders if you are given a table of data

Be able to use a reaction equation to find the instantaneous reaction rate

Know the 10° rule of thumb for reaction rates

Be able to draw an energy diagram with and without a catalyst

Be able to identify a catalyst if you are given the steps in a reaction

Practice Problems:

1. A chemist analyzes the following reaction:

$$2A\ (g) + B_2\ (g) \rightarrow 2AB\ (g)$$

She collects the following data.

Trial	Initial Concentration of A (M)	Initial Concentration of B (M)	Instantaneous Reaction Rate
1	0.36	0.41	1.3
2	0.72	0.41	5.2
3	0.72	0.82	10.4

a. Write the rate equation for this reaction. Find both orders and k.
b. If this reaction was run with [A] = 1.5 M and [B] = 0.8 M, what would the reaction rate be?

2. A chemist runs a reaction at 30ºC and the reaction rate is 14.8 M/s.
    a. At what temperature will the reaction rate be 1.85 M/s?
    b. At what temperature will the reaction rate be 118.4 M/s?