Temperature and Reaction Rates - Reading Guide

*section 12.5 in OpenStax*

**The Effect of Temperature on Rate**

What does increasing the temperature do to the rate? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Write the *slope-intercept form* of the **Arrhenius equation** here:

To yield a straight line, what would you plot on the x-axis? \_\_\_\_\_\_\_\_\_\_\_\_ And the y-axis? \_\_\_\_\_\_\_\_\_\_\_

Show how you would use the graph above to calculate Ea.

(ans. 1.85 × 104 J/mol)

Show how you would use the graph above to calculate the frequency factor, A.

(ans. 9.72 × 1010)

Complete the two-point form of the Arrhenius equation:

Work through Example 12.11 and then attempt the following problem.

A reaction has a rate constant of 0.000122 s-1 at 27oC and 0.228 at 77oC. Determine the Ea for this reaction.

*(ans. 131 kJ/mole)*

**End of Chapter 12 Practice Problems**

#65a, 67

For detailed solutions to these problems, go to the [OpenStax website](https://openstaxcollege.org/textbooks/chemistry/resources) and download the “Student Answer and Solution Guide.”