Exercise # 6: Interpreting And Understanding The Activated Complex (Eyring-Polanyi) Diagram

## Organic Chem I Alfred State College

***Potential***

***Energy***

\*

\*

A

B

***reaction coordinate***

Assume the above describes the chain propagation steps [ steps 2 &3] of methane halogenation by two different halogens, Cl2 and Br2

1) which curve describes halogenation with Br; which with Cl ?

2) sketch the transition state ( =activated complex = \*) for the rate limiting step of both curve A and B

***rate limiting transition state appearance for ...***

**A B**

3) Why is curve A `compressed’ compared to curve B (hint...its connected to a postulate)

1. Suppose the temperature of the halogenation is raised. Does the diagram change in

shape ? What does the diagram tell us-if anything-about the effect of temperature ?