

**KSU – Chemical Engineering Department**  
**ChE 320 (Chemical Reactor Engineering) – TUT #3**

Name: \_\_\_\_\_

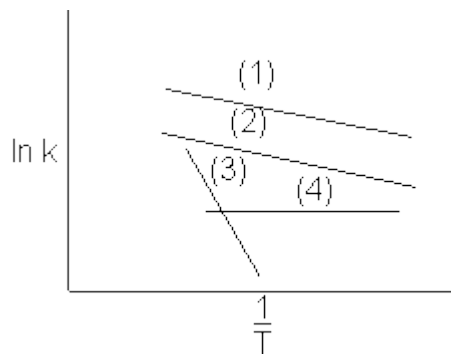
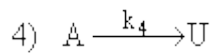
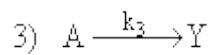
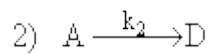
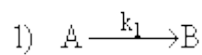
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1. The initial reaction rate for the elementary reaction:  $2A + B \rightarrow 4C$ , was measured as a function of temperature when the concentration of A was 2 M and that of B was 1.5 M. Calculate the activation energy and the frequency factor. Use Polymath.

$-r_A$ (mol/L.s)	0.002	0.046	0.72	8.33
T(K)	300	320	340	360

2. Consider the following elementary reactions



Which reactions have the same activation energy?

Which reaction will dominate (i.e. take place the fastest) at high temperatures?