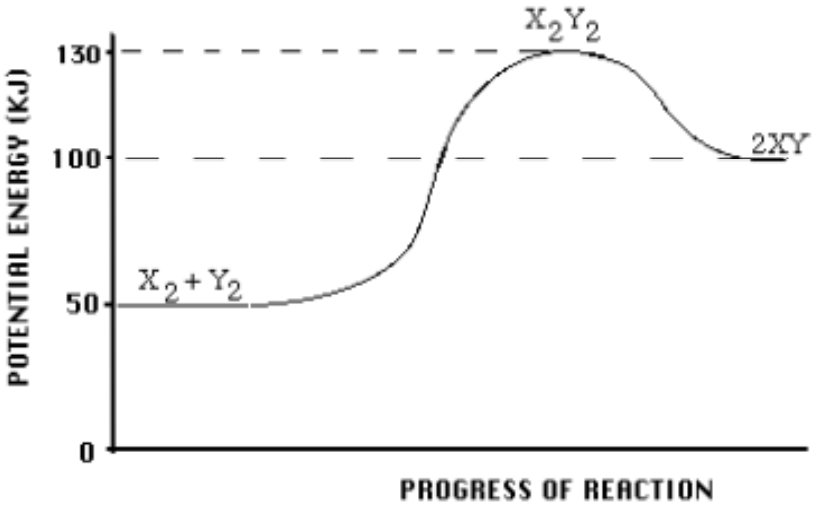
Name _____ Potential Energy Diagrams

**Use the following potential energy diagram to answer the questions below.**




1. Is the overall reaction as shown **exothermic** or **endothermic**?_____

2. What is the **activation energy** for the forward reaction?_____

3. What is the **activation energy** for the reverse reaction?_____

4. What is the **enthalpy change of reaction** (ΔH) for the *forward* reaction?_____

5. What is the **ΔH** for the *reverse* reaction? _____

6. Is the ***reverse*** reaction **exothermic** or **endothermic**? _____

7. Which species forms the ***activated complex***? _____

8. Which species or set of species has the *highest* **potential energy**? _____

9. Which species or set of species has the *highest* **kinetic energy**?_____

10. Which species or set of species has the ***weakest*** **bonds**?_____

11. Which species or set of species has the ***strongest*** **bonds**? _____

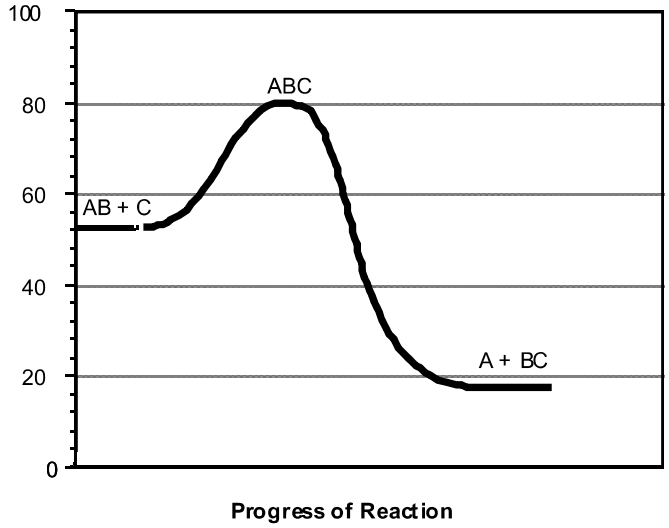
12. Which do you think would be *faster*, the **forward** reaction or the **reverse** reaction?

_____ Explain. _____

_____

13. Draw in the **ΔH**, the Activation Energy for the *forward* reaction and the Activation Energy for the *reverse* reaction in on the graph.

**Use the following *Potential Energy Diagram* to answer the questions below:**




14. Determine the ***Activation Energy*** for the *forward* reaction... _____kJ

15. Determine the ***Activation Energy*** for the *reverse* reaction.... _____kJ

16. What is the ***Enthalpy Change*** (ΔH) for the *forward* reaction? _____kJ

17. What is the ***Enthalpy Change*** (ΔH) for the *reverse* reaction? _____kJ

18. The *forward* reaction is _____thermic. The *reverse* reaction is _____thermic.

19. Which species or set of species forms the ***Activated Complex***? _____

20. Which bond is *stronger*, A--B or B--C?_____ Give a reason for your answer.

_____

21. The compound "AB" is a gas and the element "C" is a solid. What effect would grinding "C" into a fine powder have on the graph shown here? _____

22.As reactant particles approach each other before a collision, the ***Potential*** Energy _____, while the ***Kinetic*** Energy _____.

23. State the meaning of ***Activated Complex***._____

_____

24. State the meaning of ***Activation Energy***. _____

_____

25. What two requirements must be met before a collision between two reactant particles is ***effective***?

1. _____
2. _____

26. Describe what happens to 2 reactant particles which collide with *less* energy than the ***Activation Energy***.

_____