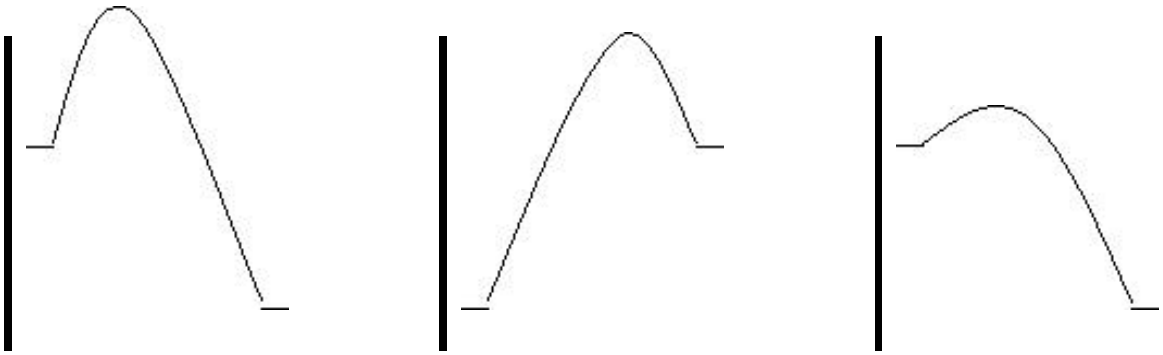
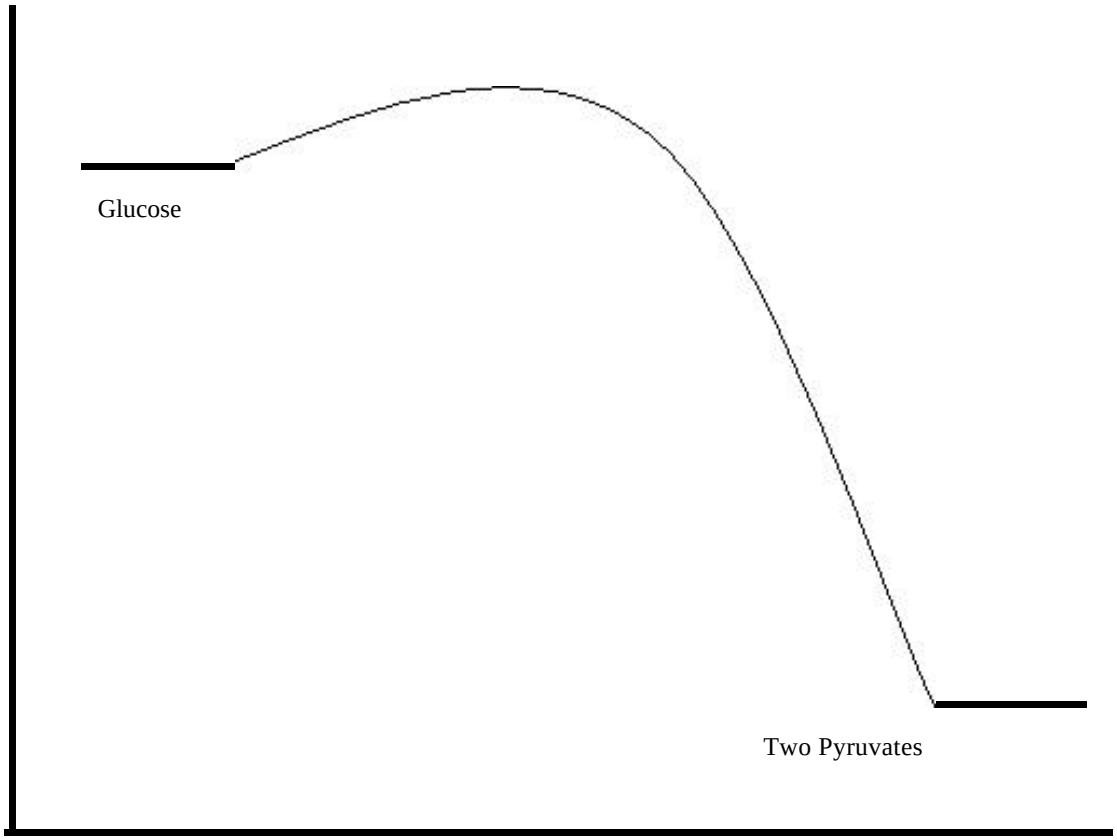
# Chemical Potential Energy Diagrams, Activation Energy and Catalysts

1) *At the mere touch of a feather nitrogen tri-iodide undergoes a violent decomposition reaction that releases enormous amounts of energy.* Which of the following chemical potential energy diagrams best represents this reaction and why?



2) *Magnesium reacts with oxygen to form magnesium oxide. This reaction releases significant energy in the form of heat and particularly light. However, to initiate this reaction requires the heat of a Bunsen burner.* According to the description, draw a chemical potential energy diagram.

3) *Glucose is broken down into two pyruvate molecules during a biological reaction called glycolysis. This reaction is facilitated by a number of biological catalysts called enzymes. One such enzyme is called glucose-1,6-biphosphatase. Below the chemical potential energy diagram is drawn for glycolysis in the presence of glucose-1,6-biphosphatase.* Re-draw the chemical potential energy diagram for glycolysis in the absence of this crucial enzyme.


Glucose
Two Pyruvates