Energy Storage in Your Body

Name _____

1) Below is a chart depicting how much chemical potential energy and heat energy molecules have. Determine where ADP-OH, Pi-H, ATP, and H₂O would go in this chart and explain why you put them where you did.

Place the following molecules in the chart to the right:

ADP-OH Pi-H ATP H₂O

Use the reactions above and the idea of chemical vs. heat energy to determine which molecules should be placed over which column.

Explanation of your choices:



Chart of Chemical and Heat Energy Involved in the

2) Your body maintains a constant temperature despite the temperature of your surroundings. When standing outside on a cold day, which reaction listed below will help to keep you warm and why?

$$\begin{array}{c} \text{ADP-OH + Pi-H ---> ATP + H_2O} \\ \text{or} \\ \text{ATP + H_2O ---> ADP-OH + Pi-H} \end{array}$$

3) Which chemical bond is stronger the one between ADP and OH or the one between ADP and Pi? How do you know?