READING GUIDE CHAPTERS 16 ENERGY AND CHEMICAL CHANGE

Name_____per___

a. page 490. What is the LAW OF CONSERVATION OF ENERGY?

b. what is the FIRST LAW OF THERMODYNAMICS?

c. Define one calorie

d. Define one Calorie

e. Calorie is a metric system unit of heat. What is the SI unit of heat?

PRACTICE PROBLEMS ON PAGE 492:

1.- A fruit and oatmeal bar contains 142 nutritional calories. Convert this energy to calories.

2. - An exothermic reaction releases 86.5 kj. How many kilocalories of energy are released?

3. - If an endothermic process absorbs 256 J, how many kilocalories are absorbed?

f. Define SPECIFIC HEAT of any substance:

g. Define each variable in the equation $q = c \times m \times \Delta T$

PRACTICE PROBLEMS ON PAGE 495

4. If the temperature of 34.4 g of ethanol increases from 25.0 degrees to 78.8 degrees C, how much energy has been absorbed by ethanol? The specific heat of ethanol is 2.44 J/g C

10. One lawn chair is made of aluminum and another of iron. Both are painted the same color. On a sunny day, which will be hottest to sit on?

Explain your answer.

h. Read section 16.2 on pages 496 and 497 and then summarize HOW the specific heat of an unknown metal could be determined:

Using your summary calculate the specific heat of an unknown metal. The metal has a mass of 40 grams and is heated to 90 degrees C. It is placed into 100grams of water at 23 degrees and the final temperature of both becomes 30 degrees.