Name _____

Energy Practice Problems
☺ WOOHOO! ☺

1. How much energy must be absorbed by a 20 g aluminum pan to increase its temperature from 283 °C to 303 °C?

q=

m=

c=

Ti=

Tf=

2. When 15 g of steam (gaseous water) drops in temperature from 275 °C to 250 °C, how much heat energy is released?

q=

m=

c=

Ti=

Tf=

3. A piece of solid gold weighs 18.62 grams and is at a temperature of 10 °C. If 14 calories are used to warm up the piece of gold, what is its final temperature?

q=

m=

c=

Ti=

Tf=

4. A certain mass of liquid water was heated with 10,000 calories, raising its temperature from 22 °C to 28.5 °C. Find the mass of water.

q=

m=

c=

Ti=

Tf=

5. A total of 54 calories of heat are absorbed as 58.3 g of lead is heated from 12 °C to 42 °C. From this data, what is the specific heat of lead?

q=

m=

c=

Ti=

Tf=

6. An "Uncrustable" peanut butter and jelly sandwich is put in a bomb calorimeter. If 5, 125 grams of water are heated from 21 ^{0}C to 62 ^{0}C during this time…

a) How many scientific calories are absorbed by the water?

q=

m=

c=

Ti=

Tf=

b) How many scientific calories are released by the sandwich, then? (Don't think too hard)!

c) How many Nutritional Calories are contained in the sandwich?

7. A container of yogurt is burned under a container of water. 180 Nutritional Calories are in the yogurt. If 3,420 grams of water are heated and the water starts at 24 ^{0}C…

a) How many scientific calories are contained in the yogurt?

b) How many scientific calories would be absorbed by the water during the burning of the yogurt, then? (Don't think too hard)!

c) What is the final temperature of the water?

q=

m=

c=

Ti=

Tf=

8. A Big Mac at McDonald's contains 550 Nutritional Calories. If 7,200 grams of water are heated to 97 degrees as the Big Mac burns…

a) How many scientific calories are contained in the Big Mac?

b) How many scientific calories would be absorbed by the water during the burning of the Big Mac, then? (Don't think too hard)!

c) What was the original temperature of the water?

q=

m=

c=

Ti=

Tf=

9. A bag of skittles are put in a bomb calorimeter. If 4,820 grams of water are heated from 23 ^{0}C to 75 ^{0}C during this time…

a) How many scientific calories are absorbed by the water?

q=

m=

c=

Ti=

Tf=

b) How many scientific calories are released by the candy, then?
(Don't think too hard)!

c) How many Nutritional Calories are contained in the candy?