**Chemistry 122**

**Specific Heat Capacity Problems**

1. Water has a specific heat capacity of 4.184J/g∙oC.
2. How much energy must be added to 1450g of water to raise the temperature from 5.5oC to 29.0oC?
3. How much energy must be removed from 10.55kg of water to lower the temperature from 22.5oC to 3.0oC?
4. Adding 550cal of energy raised the temperature of water from 10.0oC to 13.25oC. What was the mass of the water?
5. 3.50kJ of energy was removed from 1.82kg of water. How much did the temperature drop?
6. Iron has a specific heat capacity of 0.45J/g∙oC.
7. How much energy must be added to 376g of iron to raise the temperature from 25.5oC to 429.0oC?
8. How much energy must be removed from 1000.kg of iron to lower the temperature from 522.5oC to 63.0oC?
9. Removing 9550kcal of energy lowered the temperature of iron from 100.0oC to 73.25oC? What was the mass of the iron?
10. 70J of energy was added to 5.80kg of iron. If the iron was originally at 25.0oC, what was the final temperature of the iron?
11. Steam has a specific heat capacity of 1.90J/g∙oC.
12. How much energy must be added to 125kg of steam to raise the temperature from 105.5oC to 129.0oC?
13. How much energy must be removed from 1520kg of steam to lower the temperature from 202.5oC to 100.0oC?
14. Removing 550cal of energy lowered the temperature of steam from 120.0oC to 115.0oC. What was the mass of the steam?
15. 109kJ of energy was added to 2.50kg of steam. If the steam was originally at 100.0oC, what was the final temperature of the steam?
16. What quantity of heat is absorbed when a 5.25g piece of glass is heated from 22.3oC to 45.7oC? The specific heat of glass is 0.84J/g∙oC. Express your answer in kilocalories.
17. What is the final temperature of 56.8g of gold, originally at 15.0oC, if the metal absorbs 235J of energy? The specific heat capacity of gold is 0.129J/g∙oC.