## Thermochemistry Review For the Test

1. Determine the energy required when:
   1. 25.0 g of water is cooled from 76.5 °C to 25.9 °C.
   2. 125.0 g of ice is warmed from -35.0 °C to 0.0 °C, but does not melt.
   3. 130.0 g of steam heats from 155 °C to 255. °C.
2. Determine the energy required to:
   1. boil 4.89 grams of water at 100.0 °C.
   2. freeze 174.5 grams of water at 0 °C
   3. condense 23.8 grams of water at 100.0 °C.
3. Determine the energy change involved to: (required of honors, extra credit for regular)
4. Convert 134.0 grams of water at 30.0 °C to final temperature of 124.0 °C.
5. Convert 125.0 grams of ice at -25.0 °C to a final temperature of 220.0 °C.
6. Determine the energy released when converting 500. g of steam at 75.0 °C to ice at -35.0 °C.
7. How much energy is required to heat a 125 g sample of magnesium from 22.8 °C to 59.2 °C?
8. Calculate the quantity of heat in the following changes
   1. 3.50 mole of water freezes at 0°C
   2. 0.44 mole of steam condenses at 100 °C
9. The temperature of an unknown metal with a mass of 95.4 grams increases from 25.0 °C to 48.0 °C when the metal absorbs 849 J of heat. What is the specific heat of the metal?
10. How many kilojoules of heat are absorbed when 1000. grams of water is heated from 18 °C to 85 °C.
11. A small pebble is heated and placed in a foam cup calorimeter containing 25.0 grams of water at 25.0°C. The water reaches a maximum temperature of 26.4°C. How many joules of heat were released by the pebble?
12. If the temperature increases what happens to the volatility?
13. If the IMF increases what happens to the volatility?
14. If the temperature increases what happens to the vapor pressure?
15. If the IMF increases what happens to the vapor pressure?
16. If the atmospheric pressure increases what happens to the boiling point?
17. If the IMF increases what happens to the boiling point?
18. A. -5290J

B. 8970 J

C. 26300J

1. A. 11,100J

B. -58280 J

C. -53800J

1. A. 349,000J

B. 413,000 J

C.-1620000 J

1. 4650J
2. a. -2100 J b. -1800 J
3. 0.387 J/g°C
4. 280 KJ
5. 146 J
6. increase
7. decrease
8. increase
9. decrease
10. increase
11. increase
12. A. 5290J

B. 8970 J

C. 26300J

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