Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chem R Pd. \_\_\_ Heat Calculations

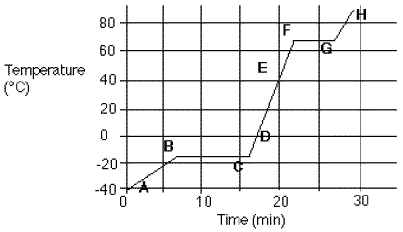
**MIXED Heat Calculation Problems**

**Key words to look for:**

Q = mc∆T Q = mHf Q = mHv

|  |  |  |
| --- | --- | --- |
| **Problem:** | **Formula/work:** | **Answer:** |
| 1. How much heat is absorbed when 50.0 g of water is boiled at 100°C? |  |  |
| 2. How much heat is absorbed when the temperature of 25.0 g of water increases from 35.0°C to 55.0°C? |  |  |
| 3. How much heat is required to melt 45.0 g of ice at 0°C? |  |  |
| 4. How many grams of water will 50,000 Joules of heat boil at 100°C? |  |  |
| 5. If a 30.0 g sample of water absorbs 400.0 Joules of heat at an initial temperature of 20.0°C, what is the change in temperature? |  |  |
| 6. How many grams of water will 800.0 J of heat energy change from solid to liquid? |  |  |
| 7. If a 45.0 g sample of water releases 300.0 J of heat at an initial temperature of 40.0°C, what is the final temperature? |  |  |

Base your answers to questions 8–10 on the information below.

 **Heating Curve for Mercury**

|  |  |
| --- | --- |
| **Physical Constants for Mercury** | |
| Heat of Fusion (J/g) | 11. |
| Heat of Vaporization (J/g) | 272 |
| Specific Heat (J/g°C) | 0.14 |

8. How much heat is absorbed by 50.0 grams of mercury during interval CF?

**Formula:**

9. How much heat is absorbed by 50.0 grams of mercury during interval FG?

**Formula:**

10. How much heat is absorbed by 50.0 grams of mercury during interval BC?

**Formula:**