

### Thermochemistry Calculations Practice

$$\text{Equation 1: } Q = mc\Delta T$$

\*\*\*Round all answers to the nearest hundredth!

1. What does each variable represent and what unit will be used?

- A.  $Q =$  \_\_\_\_\_; \_\_\_\_\_
- B.  $m =$  \_\_\_\_\_; \_\_\_\_\_
- C.  $c =$  \_\_\_\_\_; \_\_\_\_\_
- D.  $\Delta T =$  \_\_\_\_\_; \_\_\_\_\_

2. The specific heat of water is \_\_\_\_\_.

3. **True or False** The specific heats of various metals can be found in your reference packet.

4. A 15.75-g piece of metal absorbs 1086.75 joules of heat energy, and its temperature changes from 25°C to 175°C. Calculate the specific heat capacity of the metal.

5. 1740J of energy can heat 85g of what metal (answer is the element's SYMBOL) from 80°C to 100°C?

6. How many joules of heat are needed to raise the temperature of 10.0 g of aluminum from 22°C to 55°C?

7. What mass of water will change its temperature by 3°C when 525 J of heat is added to it?

8. A 0.3 g piece of copper is heated and fashioned into a bracelet. The amount of energy transferred by heat to the copper is 66,300 J. What is the change of the copper's temperature?

9. 388 J of heat are required to raise the temperature of 50g of what metal (answer is the element's SYMBOL) from 50°C to 70°C?