

Lab Instructor: \_\_\_\_\_

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

**DATA**

1. Mass of metal and test tube	
2. Mass of empty test tube	
3. Mass of metal	
4. Mass of empty calorimeter	
5. Mass of calorimeter plus about 60 mL water	
6. Mass of water in calorimeter	
7. Temperature of water in calorimeter before adding metal (initial temp. of water)	
8. Temperature of water in calorimeter after adding metal (final temp. of water and metal)	

**CALCULATIONS (Show all calculation setups, including units)**

<b>Show work here</b>	<b>Result</b>
9. Temperature change of water	
10. Temperature change of metal (assume the initial temp. of metal is 100°C)	
11. Heat absorbed by water (in calories)	
12. Heat absorbed by water (in joules)	
13. Heat given off by metal (in calories)	

14. Heat given off by metal (in joules)	
15. Heat capacity of metal (in calories/g°C)	
16. Heat capacity of metal (in J/g°C)	

**Question:**

1. 37.24 g of an unknown metal was heated to 100 °C in a water bath. The metal was then added to 65.44 g of water in a calorimeter that was initially at 22.9°C. The temperature of the water ended up at 27.3 °C. What was the specific heat of this metal, in cal/g•°C?

2. If a different metal with a higher specific heat capacity were used in the above experiment, would the final temperature of the water be higher or lower? Explain.