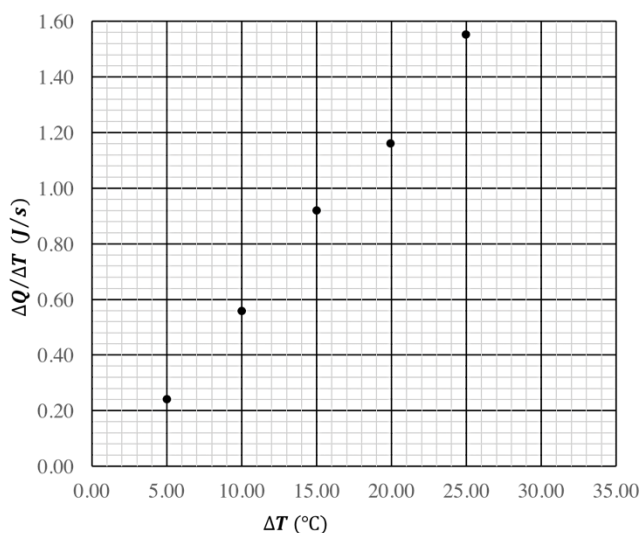


Name \_\_\_\_\_ Instructor name \_\_\_\_\_

**You must show and explain all work neat and organized to receive credit. Please show each step for calculations. YOU MUST TURN IN THIS SHEET to have your assignment graded.**

1. Why are portable coolers often made of Styrofoam? A metal cooler would be much sturdier. (3pts)

2. A bar with cross-sectional area  $A = 0.750 \text{ cm}^2$  is used to conduct heat between two regions at different temperatures. The bar is made of silver,  $k = 417 \text{ W}/(\text{m} \cdot \text{K})$ . The figure below shows the rate of heat flow as the temperature difference between these two regions increases. Using the proper graphing method, find the length of the silver bar. Please read the Introduction section of the Laboratory Manual for help on graphing. (10 pts)



3. In Question 2, if the length of the bar is halved, what would be the new slope for a graph of the rate of heat flow vs. temperature difference? (7pts)