Experimental problem

The following devices and materials are given:

1. Balance (without weights)
2. Calorimeter
3. Thermometer
4. Source of voltage
5. Switches
6. Wires
7. Electric heater
8. Stop-watch
9. Beakers
10. Water
11. Petroleum
12. Sand (for balancing)

Determine specific heat of petroleum. The specific heat of water is 1 cal/(g·°C). The specific heat of the calorimeter is 0.092 cal/(g·°C).

Discuss assumptions made in the solution.