Due 09/16 Wednesday

Physics 251 Bonus question 1 (optional)

Imagine that I have two pieces of different types of metal of the same mass. I then perform the following experiment. I have 500 ml of water in a beaker with a diameter of 75 mm at 20.0+/-0.05°C in a well insulated container. I heat both of the masses to 100°C. I place metal A in the water container. After waiting some time, I find that the temperature of the system stabilizes at 24.8+/-0.05 °C. I then add metal B to the system and the final temperature is 26.7+/-0.05°C. I also observe that when I place metal B in the water, the water level rises by 3.7 +/- 0.1 mm

Without any numeric solutions, which metal has the higher heat capacity? Explain.

Again, without any numeric solutions, which metal has a higher density? Explain.

What are the metals?

What is the mass of each of the two pieces of metal?

How much does the water rise when I add metal A?