

Name: _____ Date: _____ Period: _____

C405 Heat Transfer Calculations

Directions: In the mixtures below, calculate the required item. Show ALL of your work.

	Component 1	Component 2	Mixture
1	Material: Solid Mass: 100.0 g Specific Heat= 0.48 J/g °C Temperature= 100 °C	Material = Water Mass = 200.0 g Specific Heat = 4.184 J/g °C Temperature = 25 °C	Final Temperature= _____
	$\text{Heat loss}_{\text{solid}} = \text{Heat gain}_{\text{water}}$ $(m * Cp * \Delta T)_{\text{solid}} = (m * Cp * \Delta T)_{\text{water}}$		
2	Material = Olive oil Mass = 100.0 g Specific Heat = 2.0 J/g °C Temperature = 80. °C	Material = Olive oil Mass = 200.0 g Specific Heat = 2.0 J/g °C Temperature = _____ °C	Final Temperature= <u>33. °C</u>
	$\text{Heat loss}_{\text{solid}} = \text{Heat gain}_{\text{water}}$ $(m * Cp * \Delta T)_{\text{hot oil}} = (m * Cp * \Delta T)_{\text{cold oil}}$		
3	Material = Metal Mass = 56.0 g Specific Heat = _____ J/g °C Temperature = 100 °C	Material = Water Mass = 100.0 g Specific Heat = 4.184 J/g °C Temperature = 25 °C	Final Temperature= <u>27 °C</u>
	$\text{Heat loss}_{\text{solid}} = \text{Heat gain}_{\text{water}}$ $(m * Cp * \Delta T)_{\text{metal}} = (m * Cp * \Delta T)_{\text{water}}$		