Honors Homework Check: Specific Heat Capacity Name _____

Show work! Follow Sig Fig Rules!

1 cal = 4.184 J

Substance	Specific Heat Capacity (in J/gC)
Aluminum	0.902
Copper	0.398
Water	4.184
Iron	0.45
Ammonia	4.7

1. Which of the substances in the chart to the right will change temperature the LEAST if 5.0 g samples of each material are heated with 10.0 J of energy? Justify your answer.

2. 19 J = ? cal

3. 7.6 kJ = ? cal

4. A 250.0 g sample of iron metal is heated with 150.0 calories of energy. If the aluminum sample begins at 21.0 °C, what will be the final temperature?

5. A sample of copper metal is heated with 28 J of energy and experiences a temperature change of 18 °C. What is the mass of the sample?

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1 cal = 4.184 J

Substance	Specific Heat Capacity (in J/g°C)
Air	1.00
Carbon Dioxide	0.839
Helium	5.193
Hydrogen	14.3
Oxygen	0.918

1. Which of the substances in the chart to the right will change temperature the **MOST** if 10.0 g samples of each material are heated with 15.0 J of energy? Justify your answer.

2. 25.0 cal = ? J

3. 2000 cal = ? kJ

4. A 125.0 g sample of air is heated with 100.0 calories of energy. If the air sample begins at 25.0 °C, what will be the final temperature?

5. A sample of oxygen gas is heated with 25.0 J of energy and experiences a temperature change of 5.0 °C. What is the mass of the sample?