Name _____

Specific Heat Worksheet

Substance	Specific Heat (J/g°C)	Specific Heat (cal/g°C)
ice -10°C to 0°C	2.090	0.50
water 0°C to 100°C	4.187	1.00
steam 100°C	2.010	0.48
iron	0.448	0.170
aluminum	0.900	0.215
lead	0.128	0.0305
copper	0.390	0.0920

1. How much **heat**, in **J**, is required to raise the temperature of 5.0g of **ice** from –10.0°C to 0.0°C?

2. How much **heat**, in **cal**, is required to melt 5.0g of **ice** at -10.0°C to 0.0°C?

3. What amount of **heat**, in **J**, is required to **heat** 5.0g of **liquid water** from 0.0°C to 100.0°C?

4. How much **heat**, in **cal**, is required to change 5.0g of **liquid water** at 0.0°C to 100.0°C?

5. How many **J** of energy are required to **heat** 5.0g of **copper** from 100.0°C to 120.0°C?

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6. What is the **mass(g)** of a sample of **aluminum** that absorbs 330 calories of heat and changes from 25°C to 45°?

7. What is the **mass(g)** of a sample of **iron** that absorbs 70 J of energy and changes from 10 °C to 90 °C?

8. A 50.0g sample of a material requires 660cal of **heat** to have its temperature raised from 20.0°C to 80.0°C. What is the **specific heat** of the material, a) in **J/g°C**? b) in **cal/g°C?**

9. How much **heat**, in **J**, is required to raise the temperature of 3.5g of **lead** from -10.0°C to 0.0°C?

10. How much **heat**, in **cal**, is needed to **heat** 20.0g of **lead** from 20.0°C to 150.0°C?