Name: _____

Honors Chemistry: ☐ yellow ☐ blue ☐ red

Heating Curve Problems

Use data from the following table:

Compound	s $(sol.)$ $(\frac{\text{J}}{\text{g·K}})$	M.P. (°C)	ΔH_{fus} $(\frac{\text{J}}{\text{g}})$	s $(liq.)$ $(\frac{\text{J}}{\text{g·K}})$	B.P. (°C)	ΔH_{vap} $(\frac{\text{J}}{\text{g}})$	s (gas) $(\frac{\text{J}}{\text{g·K}})$
H_2O	2.09	0	334	4.184	100	2260	1.97*
K	0.560	62	61.4	1.070	760	2025	0.671
Hg	—	−39	11	0.138	357	294	0.104
Ag	0.217	961	105	0.318	2212	2355	—

1. How much heat is needed to raise the temperature of a 25.0 g sample of H_2O from −25°C to 125°C?

*at 100°C. The specific heat (s) of steam increases slightly with increasing temperature. For example, the C_p of steam at 200°C is 2.00.

2. How much heat is needed to raise the temperature of 85 g of potassium from 25°C to 2,500°C?