Name_____

Heat Problems

1. How much heat is required to heat 3.4 mol of aluminum from 250. K to 289 K?

2. How much heat is required to heat 75.2 g of gold from 293 K to 371 K?

3. If 43 kJ of heat are added to 65 mol of silver at 5^o C what will its final temperature be?

4. If 83 kJ of heat are added to 84 g of cobalt at 287 K, what will its final temperature be?

5. What is the molar heat capacity of 15.4 moles of an unknown substance heated from -12^o C to 15^o C by 12.1 kJ of energy, what is the substance?

6. 11.2 kJ of heat are added to 79 g of an unknown liquid. The temperature rises from 3° C to 37° C, what is the specific heat capacity of the substance, what is the substance?

7. 1247 J of heat are added to 63 g of an unknown silver colored metal. The temperature rises from 8° C to 59° C, what is the specific heat capacity of the substance, what is the substance?

8. How many grams of octane (C₈H₁₈) would rise from 3^o C to 45^o C when 39.4 kJ of energy is added?

9. What will the final temperature of 5.4 mol of sodium chloride at -5° C heated by 2.1 kJ of energy?

10. What was the initial temperature of 120 g or iron that was heated with 2.1 kJ if its final temperature is 387 k?