Lab scenario:

In an experiment, you added 0.5 grams of strontium metal to 100.0 grams of water. The temperature of the water increased from 20.0 °C to 25.0 °C. Use this information to answer the following questions:

Reaction: Sr + 2H2O 🡪 Sr(OH)2 + H2

1.) What was the ΔT for the reaction?

2.) How many moles of strontium reacted?

3.) What type of reaction is this and what will the sign be for ΔH?

4.) How much heat did the water gain/lose?

5.) How much heat did the reaction gain/lose?

6.) What is the ΔH for the reaction in kJ/mol Sr?

7.) Write the thermochemical equation for the reaction.

Lab scenario:

In an experiment, you added 0.5 grams of strontium metal to 100.0 grams of water. The temperature of the water increased from 20.0 °C to 25.0 °C. Use this information to answer the following questions:

Reaction: Sr + 2H2O 🡪 Sr(OH)2 + H2

1.) What was the ΔT for the reaction?

2.) How many moles of strontium reacted?

3.) What type of reaction is this and what will the sign be for ΔH?

4.) How much heat did the water gain/lose?

5.) How much heat did the reaction gain/lose?

6.) What is the ΔH for the reaction in kJ/mol Sr?

7.) Write the thermochemical equation for the reaction.

Lab scenario:

In an experiment, you added 0.5 grams of strontium metal to 100.0 grams of water. The temperature of the water increased from 20.0 °C to 25.0 °C. Use this information to answer the following questions:

Reaction: Sr + 2H2O 🡪 Sr(OH)2 + H2

1. What was the ΔT for the reaction?

ΔT = 25.0 °C - 20.0 °C = 5 °C

1. How many moles of strontium reacted?

0.5 g \* 1 mole = 0.0057 moles Sr

87.62

1. What type of reaction is this and what will the sign be for ΔH?

Exothermic Reaction - ΔH

4.) How much heat did the water gain/lose?

(100 g)(4.184 J/g C)(5 °C) = 2090 J or 2.09 J

5.) How much heat did the reaction gain/lose?

(100 g)(4.184 J/g C)(5 °C) = 2090 J or 2.09 J

6.) What is the ΔH for the reaction in kJ/mol Sr?

2090 J = 366.66 - ΔH

0.0057 moles

7.) Write the thermochemical equation for the reaction.

Reaction: Sr + 2H2O 🡪 Sr(OH)2 + H2 + 366.66 - ΔH