

Solutions

Each answer shows the steps, then the **result**.

2.1

- The reaction is exothermic (releases heat)

2.2

- 450 kJ

2.3

- It flips the sign

3.1 C

- ΔH scales with the coefficients, so it doubles to -200 kJ

3.2

(a)

- Exothermic

(b)

- ΔH is -92 kJ per 2 mol NH_3 , so per 1 mol it is -46 kJ

3.3

- $8.0 \text{ g} \div 16 = 0.50 \text{ mol}$; heat = $0.50 \times 890 = 445 \text{ kJ}$