

Solutions

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

2.1

- Two steps

2.2

- An intermediate

2.3

- The step with the higher peak (larger activation energy)

3.1 B

- a valley between peaks

3.2

(a)

- step 1: $100 - 40 = 60$ kJ; step 2: $90 - 70 = 20$ kJ

(b)

- Step 1 (higher barrier)

(c)

- $\Delta H = 30 - 40 = -10$ kJ

3.3

- A transition state (peak) is an unstable maximum that cannot be isolated; an intermediate (valley) is a real, briefly-stable species formed between steps