

Solutions

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

2.1

- gas > liquid > solid

2.2

- Positive ($\Delta S > 0$)

2.3

- Negative (fewer gas moles)

3.1 C

- subliming a solid to gas greatly increases disorder

3.2

(a)

- positive (a gas is produced)

(b)

- negative (4 gas moles
• 1.

(c)

- positive

3.3

- A gas has vastly more available positions and energy arrangements than a rigid, ordered solid, so far more microstates — hence higher entropy