

Solutions

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

2.1

- A system at equilibrium shifts to counteract an applied stress and restore equilibrium

2.2

- Toward products (forward)

2.3

- A temperature change

3.1 B

- fewer gas moles

3.2

(a)

- There are 4 gas moles left, 2 right; increasing pressure shifts toward the fewer-mole side — **toward products**

(b)

- Exothermic, so heat is a product; increasing temperature shifts **toward reactants** (backward)

3.3

- Removing SO_3 (a product) shifts the equilibrium **forward** to replace it, making more SO_3