

23 $K_p = 0.35$

25 $\Delta G^\circ = 7.9 \times 10^4 \text{ J/mol} = 79 \text{ kJ/mol}$

27 (a) $\Delta G_{\text{rxn}}^\circ = 39 \text{ kJ/mol}$

$$K_p = 1 \times 10^{-7}$$

(b) $\Delta G = 48 \text{ kJ/mol}$

29 (a) $P_{\text{CO}_2} = 1.6 \times 10^{-23} \text{ atm}$

(b) $P_{\text{CO}_2} = 0.535 \text{ atm}$

31 $P_{\text{H}_2\text{O}} = 3.1 \times 10^{-2} \text{ atm}$

35 93 ATP molecules

36 $K = 1.4 \times 10^3$