Solutions

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

2.1

- Falls

2.2

- Zero

2.3

- Increases it

3.1 B

- zero

3.2

(a)

- Increasing $[Cu^{2+}]$ (a reactant) lowers Q, so E increases

(b)

- Increasing $[Zn^{2+}]$ (a product) raises Q, so E decreases

3.3

- As the cell runs, reactants are used up and products accumulate, so Q rises toward K and E falls; at equilibrium $Q = K$ and $E = 0$