

Use the following table of standard reduction potentials to assist in answering the questions.

Li^+	•	Li	-3.0V
Na^+	•	Na	-2.7V
Al^{+3}	•	Al	-1.7V
Zn^{+2}	•	Zn	-0.7V
Fe^{+3}	•	Fe	-0.1V
H^+	•	H_2	0.0V
Cu^{+2}	•	Cu	0.3V
NO_3^-	•	NO	1.0V
Cl_2	•	2Cl^-	1.4V
MnO_4^-	•	Mn^{+2}	1.5V
Au^+	•	Au	1.7V
F_2	•	2F^-	2.9V

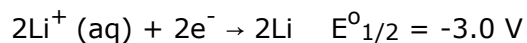
- Consider the formation of copper fluoride. Using the half cell reactions written above, what is the final reaction?
 - copper ion is oxidized and fluorine gas is reduced
 - copper ion is reduced and fluorine ion is oxidized
 - copper ion is reduced and fluorine gas is reduced
 - copper is oxidized and fluorine gas is reduced
 - copper is reduced and fluorine gas is oxidized
- What is the sum of the coefficients when the following reaction is balanced in base?

$$\text{MnO}_4^- + \text{Na}_2\text{SO}_3 \rightarrow \text{MnO}_2 + \text{Na}_2\text{SO}_4$$
 - 4
 - 13
 - 27
 - 7
- Which of the following statements is true for a cell with $E = 1.2\text{ V}$?
 - The sign of ΔG is negative.
 - The sign at the cathode is positive.
 - Reduction occurs at the anode.
 - The sign at the anode is positive.
- Consider the table of half cell reactions above. Which of the following statements is true?
 - As written, the reactions occur at ion concentrations of .1 M.
 - Sodium is a strong reducing agent.
 - The table provides standard potentials for oxidation.
 - Manganese ion is a strong reducing agent.
- Calculate the standard cell potential of a voltaic cell given the following half reactions:

$$\text{Zn}^{2+}(\text{aq}) + 2\text{e}^- \rightarrow \text{Zn}(\text{s}) \quad E^{\circ}_{1/2} = -0.8\text{ V}$$

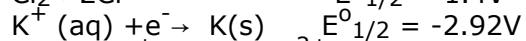
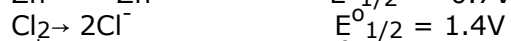
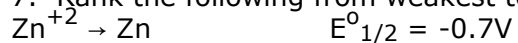
$$\text{Cu}^{2+}(\text{aq}) + 2\text{e}^- \rightarrow \text{Cu}(\text{s}) \quad E^{\circ}_{1/2} = 0.3\text{ V}$$
 - 0.11 V
 - 0.5 V
 - 0.11 V
 - 0.5 V
- Consider a cell with the half reactions below and a copper ion concentration of 1M and lithium ion 2M . What is potential of the cell?

$$\text{Cu}^{2+}(\text{aq}) + 2\text{e}^- \rightarrow \text{Cu}(\text{s}) \quad E^{\circ}_{1/2} = 0.3\text{ V}$$



- 5.8V
- 6V
- 6.02V
- 0V

7. Rank the following from weakest to strongest reducing agents: K^+ , Cl_2 , Zn , Zn^{2+}



- $\text{K}^+ < \text{Zn} < \text{Zn}^{2+} < \text{Cl}_2$
- $\text{K}^+ < \text{Zn}^{2+} < \text{Zn} < \text{Cl}_2$
- $\text{Cl}_2 < \text{Zn}^{+2} < \text{Zn} < \text{K}^+$
- $\text{Cl}_2 < \text{Zn} < \text{Zn}^{+2} < \text{K}^+$

8. How many grams of Au were used in the reduction reaction of Au^+ to Au if $9.65 \times 10^3 \text{ C}$ are used?

- 7.9 g
- 0.79 g
- 79 g
- 790 g