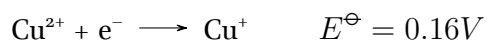


## Quiz 6.2 – Electrochemistry

Name: \_\_\_\_\_

**Reduction Potentials**Find the standard reduction potential for  $\text{Cu}^{2+} + 2\text{e}^- \longrightarrow \text{Cu(s)}$  using the following potentials:**Electrochemical Cells**Find the *standard* cell potential for a cell constructed after the following schema:What is the equilibrium constant  $K$  for this cell?

Ag/AgCl electrodes will often buffer the  $\text{Cl}^-(\text{aq})$  concentration by saturating the solution in KCl. KCl has a solubility product of  $K_{sp} = 21.7$ , and at saturation KCl has  $\gamma_{\pm} = 1.45$

Find the cell potential when the cell uses a saturated KCl solution in the anode, and has  $[\text{Ce}^{4+}] = 0.25\text{ M}$  and  $[\text{Ce}^{3+}] = 0.75\text{ M}$  in the cathode

Is this cell a voltaic cell or an electrolytic cell?

Can you explain the standard reduction potential of a Ag/AgCl electrode ( $+0.22\text{ V}$ ) using the  $\text{Ag}^+/\text{Ag}$  standard reduction potential ( $+0.80\text{ V}$ ) and the solubility product of AgCl ( $K_{sp} = 1.8 \times 10^{-10}$ )?

*For All We Have and Are*

By Rudyard Kipling

1914

For all we have and are,  
For all our children's fate,  
Stand up and take the war.  
The Hun is at the gate!  
Our world has passed away,  
In wantonness o'erthrown.  
There is nothing left to-day  
But steel and fire and stone!  
Though all we knew depart,  
The old Commandments stand:—  
"In courage keep your heart,  
In strength lift up your hand."

Once more we hear the word  
That sickened earth of old:—  
"No law except the Sword  
Unsheathed and uncontrolled."  
Once more it knits mankind,  
Once more the nations go  
To meet and break and bind  
A crazed and driven foe.

Comfort, content, delight,  
The ages' slow-bought gain,  
They shrivelled in a night.  
Only ourselves remain  
To face the naked days  
In silent fortitude,  
Through perils and dismays  
Renewed and re-renewed.  
Though all we made depart,  
The old Commandments stand:—  
"In patience keep your heart,  
In strength lift up your hand."

No easy hope or lies  
Shall bring us to our goal,  
But iron sacrifice  
Of body, will, and soul.  
There is but one task for all—  
One life for each to give.  
What stands if Freedom fall?  
Who dies if England live?