

### Activities Series Exercise SCH 4C

For each of the following pairs of metal/metallic ions write:

- a) a half reaction for each metal (will be an oxidation)
- b) a half reaction for each metallic ion (will be a reduction)
- c) determine if the pair of reaction you have written is spontaneous or not (use the left over right rule and the activity series on the reverse)
- d) if spontaneous, write the overall reaction, if necessary rewrite each half reaction in such a way as to allow the electrons lost and gained to equal out!!!
- e) using the cell potentials given on the activity series, calculate the overall potential for each set or reactions

1. Na with  $\text{Cu}^{2+}$
2. Cu with  $\text{Al}^{3+}$
3. Hg with  $\text{Ag}^{1+}$
4. Ni with  $\text{Mg}^{2+}$
5. Mg with  $\text{Ni}^{2+}$

6. Ca with  $\text{Au}^{3+}$
7. Sn with  $\text{Pb}^{2+}$
8. Pt with  $\text{K}^{1+}$
9. Mg with  $\text{Au}^{3+}$
10.  $\text{H}_2$  with  $\text{Ag}^{1+}$