

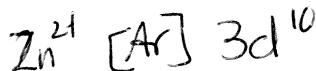
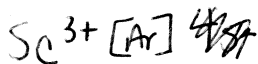
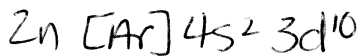
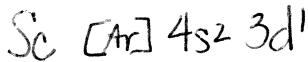
#12  $Ca^{2+} [Ar]$  |  $Cl^- [Ar]$  |  $O^{2-} [Ne]$  |  $K^+ [Ar]$  |  $Li^+ [He]$  |  $Rb^+ [Kr]$  |  $S^{2-} [Ar]$   
 #13 Name \_\_\_\_\_ all noble gas config.

## Transition Metal Electron Configuration Worksheet

1. Give abbreviated electron configurations of the following:

a) Sc atom,  $Sc^{3+}$  ion

b) Zn atom,  $Zn^{2+}$  ion



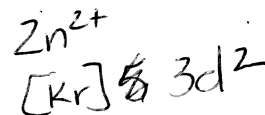
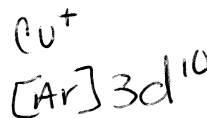
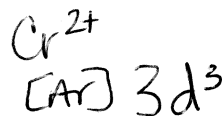
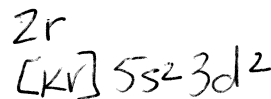
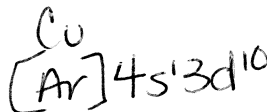
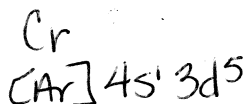
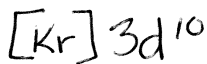
2. Using orbital diagrams, determine the number of unpaired electrons in the following:

a)  $Cd^{2+}$

b)  $Cr^{2+}$

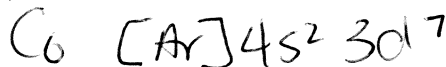
c)  $Cu^+$

d)  $Zr^{2+}$

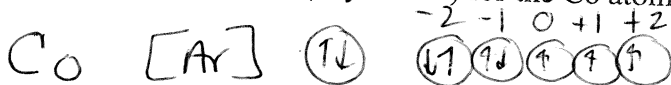


3. Consider the element cobalt ( $Z=27$ ).

a) Write the electron configuration of the Co atom and the  $Co^{3+}$  ion.



b) Give the orbital diagram (beyond Ar) for the Co atom and the  $Co^{3+}$  ion.



c) Give the quantum numbers for all the d electrons in the Co atom and the  $Co^{3+}$  ion.

