

NAME \_\_\_\_\_

89.301 - MINERALOGY  
COORDINATION NUMBERS

For each of the following, calculate the coordination number (number of anions around the cation) and compare the calculated result with the corresponding crystal model. For these calculations use the ionic radii of Whittaker and Muntus.

Pyrite - FeS

Halite - NaCl

Fluorite - CaF<sub>2</sub>

Sanidine - KAlSi<sub>3</sub>O<sub>8</sub> - calculate coordination numbers for K, Al, and Si

Quartz - SiO<sub>2</sub>

Chalcopyrite -  $\text{CuFeS}_2$  - calculate coordination numbers for Cu and Fe

Olivine -  $\text{Mg}_2\text{SiO}_4$  - calculate coordination number for Mg

Biotite -  $\text{K}_2(\text{Mg,Fe})_2\text{AlSi}_3\text{O}_{10}(\text{OH})_2$  - calculate coordination numbers for K and Mg

Augite -  $\text{CaMgSi}_2\text{O}_6$  - calculate coordination numbers for Ca and Mg

Spinel -  $\text{MgAl}_2\text{O}_4$  - calculate coordination numbers for Mg and Al