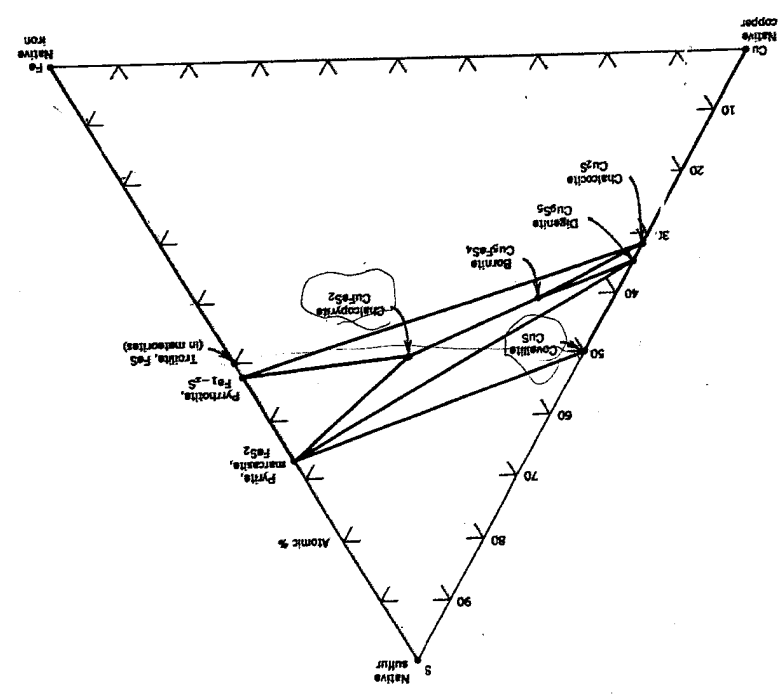


MOLECULAR WEIGHTS	
SiO <sub>2</sub>	60.08
TiO <sub>2</sub>	79.88
Al <sub>2</sub> O <sub>3</sub>	101.96
Cr <sub>2</sub> O <sub>3</sub>	151.99
V <sub>2</sub> O <sub>3</sub>	149.88
Fe <sub>2</sub> O <sub>3</sub>	159.69
FeO	71.85
MnO	70.94
MgO	40.3
CaO	56.08
ZnO	81.38
NiO	74.693
COO	74.933



12. If you mix 20 wt-% ideal grossular and 80 wt-% ideal diopside, what will the analysis of the mixture look like? [10]

13. A poster at a beach just north of Durban claims that the black grains in the sand are ilmenite. One grain gives the following analysis. Your comments (and correct mineral formula) please. [11]

MgO	14.17
Al <sub>2</sub> O <sub>3</sub>	0.61
TiO <sub>2</sub>	55.81
Cr <sub>2</sub> O <sub>3</sub>	0.96
MnO	0.27
FeO	28.17
Total	99.99

14. This gem garnet has a purplish-red colour and I had it analyzed. This appears to be a top quality analysis, but I am not sure that all the crystal chemical requirements for a garnet are fulfilled. Please evaluate. Please tell me also what the 2 most prominent end members in this analysis are. [20]

MgO	17.51
Al <sub>2</sub> O <sub>3</sub>	24.02
SiO <sub>2</sub>	40.99
CaO	0.9
TiO <sub>2</sub>	0.02
Cr <sub>2</sub> O <sub>3</sub>	0
MnO	0.39
FeO	17.09
Total	100.95