

COMPONENTS, PHASES AND STANDARD PROPERTIES.**Problem 1 (2 P)**

Use the small MATLAB program Exercise_1_Thermo on “blackboard” to find out which phases in the THERMOCALC dataset are possible if you add Mg to the system. Use Holland and Powell (2011) to find the names of the minerals.

Problem 2 (2 P)

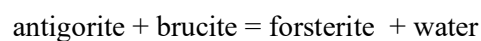
- a) Calculate the molar mass of forsterite.
- b) Calculate the molar mass of antigorite

Problem 3 (2 P)

- a) Convert the molar volume of quartz into the density (in kg/m³).
- b) Convert the molar volume of pyrope into the density (in kg/m³).

Problem 4 (2 P)

Balance the following chemical reaction:

**Problem 5 (2 P)**

Write a reaction between the phases: muscovite, quartz, sillimanite, K-feldspar and water.