

## Homework Assignment 2, Due at start of class, Thursday, Feb 12

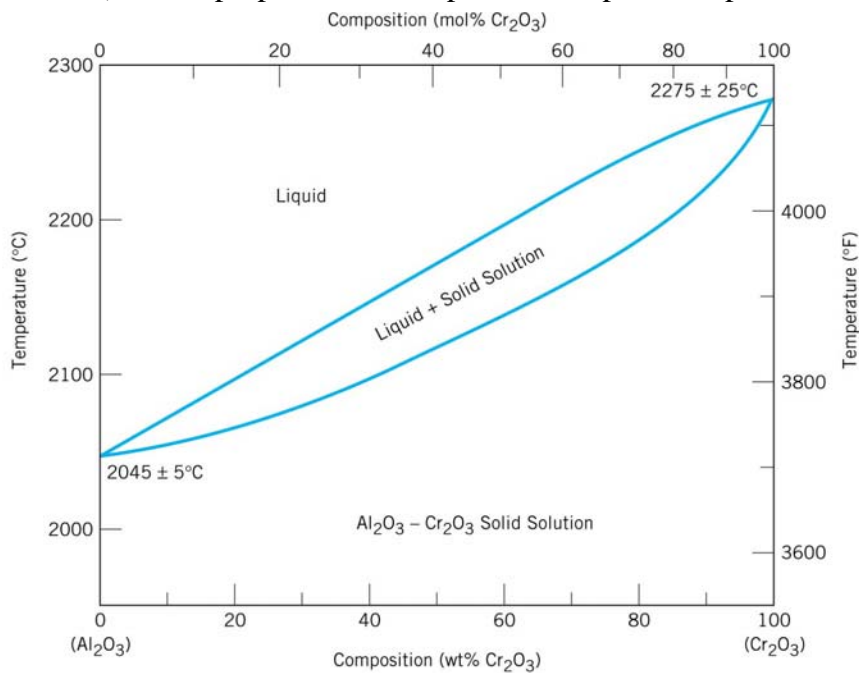
Solve Questions 12.40, 12.44, 13.5 (a,b only), 13.10, 13.15 (a only), 13.18, 13.24

AND solve the following:

EX1) Identify 3 ways to improve the mechanical properties of a ceramic part your company is selling.

EX2) For the phase diagram of  $\text{Cr}_2\text{O}_3$  and  $\text{Al}_2\text{O}_3$  in your textbook,

- a) what phase or phases will be present at  $2100^\circ\text{C}$  and 20%  $\text{Al}_2\text{O}_3$ ?
- b) What proportion of each phase/these phases is present?
- c) what phase or phases will be present at  $2200^\circ\text{C}$  and 20%  $\text{Al}_2\text{O}_3$ ?
- d) What proportion of this phase/these phases is present?



e)

EX3) What is the concentration given the following ternary phase diagram?

- a) At the 'o' location
- b) At the 'x' location.

