Problem 9-7

(a) 15% Sn 85% Pb at 100C. We have two phases: α – 5% Sn and β – 98% Sn.

$$W_\alpha = \frac{98-15}{98-5} \times 100\% = 89\% \qquad W_\beta = 100\% - 89\% = 11\%$$

(b) 25% Pb 75% Mg at 425 C. We have one phase: α – 25% Pb.

The relative amount of this phase must be 100%.

(c) 85% Ag 15% Cu at 800 C. We have two phases: β – 93% Ag, and Liquid 75% Ag

$$W_\beta = \frac{85-75}{93-75} \times 100\% = 56\% \qquad W_L = 100\% - 56\% = 44\%$$

(d) 55% Zn 45% Cu at 600C. We have two phases: β – 52% Zn, and γ – 58% Zn.

$$W_\beta = \frac{58-55}{58-52} \times 100\% = 50\% \qquad W_\beta = 100\% - 50\% = 50\%$$