1. Sperling, Ch. 4, problem #1
2. Sperling, Ch. 4, problem #2
3. Sperling, Ch. 4, problem #4

4. Toluene (molecular weight = 92, density = 0.87 g/cm³) boils at 110.6 °C at 1 atm pressure. Calculate its solubility parameter at 25 °C. Note that the enthalpy of vaporization may be approximated from the normal boiling point $T_b$ (K) of a solvent from

$$\Delta H(25 \, ^\circ C) = 23.7T_b + 0.020T_b^2 - 2950 \text{ cal/mol}$$