Flash Calculations II

Assume the feed into a flash tank consists of 25 moles pentane, 40 moles cis-2-butene and 35 moles n-butane.

1. Caclulate dew and bubble point temperatures at 200 kPa. What are the bubble and dew compositions?

2. Find the recovery of n-butane when the pressure is 200 kPa and temperature is 300 K.

3. If the flash tank operates at 100 kPa, at what temperature could you recover 60% cis-2-butene in the vapor?

Compound	A	B	C
n-Butane	15.6782	2154.9	-34.42
cis-Butane	15.8171	2210.7	-36.15
n-Pentane	15.833	2477.07	-36.15

Antoine Equation:

$$ln(P) = A - \frac{B}{T + C}$$

where P is the vapor pressure in mm Hg and T is the temperature in K.