

Exercice 1

- a) $X_{\text{ethanol}} = 0.13$, $X_{\text{eau}} = 0.87$,
- b) 5.84 M
- c) 8.44 m

Exercice 2

- a) 0.134 g
- b) 15.96 g

Exercice 3

- a) $2.24 \times 10^{-6} \text{ mol/L}$
- b) $2.24 \times 10^{-6} \text{ mol/L}$
- c) $4.5 \times 10^{-15} \text{ mol/L}$
- d) $1.06 \times 10^{-8} \text{ mol L}^{-1}$

Exercice 4 : 0.36 L N₂

Exercice 5.

38% methanol, 62% éthanol

Exercice 6

- a) 86.1% A et 13.9% B
- b) $P_{\text{tot}} = 0.685 \text{ bar}$
- c) négative

Exercice 7

$$\Delta G_{\text{mélange}} = -0.2837 \text{ kJ}$$

$$\Delta H_{\text{mélange}} = 0$$

$$\Delta S_{\text{mélange}} = 0.95 \text{ J K}^{-1}$$

Exercice 8

$$\text{a) } \Delta G_{\text{mélange}} = -5.05 \text{ kJ}$$

$$\Delta S_{\text{mélange}} = 15.88 \text{ J K}^{-1}$$

$$\text{b) } \Delta \mu_{\text{He}} = -2.90 \text{ kJ/mol}$$

$$\Delta \mu_{\text{H}_2} = -1.07 \text{ kJ/mol}$$

