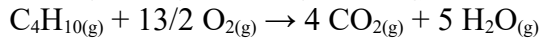
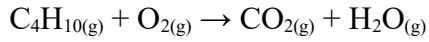


Problema 468: Axusta a reacción seguinte e di se será espontánea, utilizando as ΔG°_f



$$\Delta G^\circ_R = \sum n_p \cdot \Delta G^\circ_{f \text{ prod}} - \sum n_r \cdot \Delta G^\circ_{f \text{ react}}$$

$$\Delta G^\circ_R = 4 \text{ mol} \cdot \Delta G^\circ_f [\text{CO}_{2(g)}] + 5 \text{ mol} \cdot \Delta G^\circ_f [\text{H}_2\text{O}_{(g)}] - 1 \text{ mol} \cdot \Delta G^\circ_f [\text{C}_4\text{H}_{10(g)}] - \frac{13}{2} \text{ mol} \cdot \Delta G^\circ_f [\text{O}_{2(g)}]$$

$$\Delta G^\circ_R = 4 \text{ mol} \cdot \Delta G^\circ_f [\text{CO}_{2(g)}] + 5 \text{ mol} \cdot \Delta G^\circ_f [\text{H}_2\text{O}_{(g)}] - 1 \text{ mol} \cdot \Delta G^\circ_f [\text{C}_4\text{H}_{10(g)}]$$

$$\Delta G^\circ_R = 4 \text{ mol} \cdot \left(-394,6 \frac{\text{kJ}}{\text{mol}}\right) + 5 \text{ mol} \cdot \left(-228,6 \frac{\text{kJ}}{\text{mol}}\right) - 1 \text{ mol} \cdot \left(-17,1 \frac{\text{kJ}}{\text{mol}}\right) = \underline{\underline{-2.704 \text{ kJ}}}$$

Se a variación de enerxía libre é negativa indica que **a reacción é espontánea** a temperatura ambiente