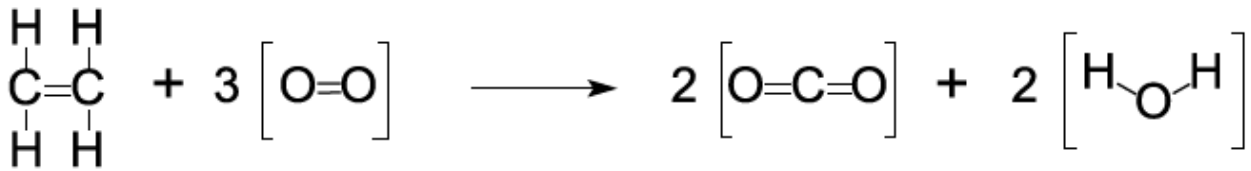
A48 *Calcula la variació de l'entalpia de reacció de les reaccions següents:*

a) $C_2H_4(g) + 3O_2(g) \rightarrow 2CO_2(g) + 2H_2O(g)$

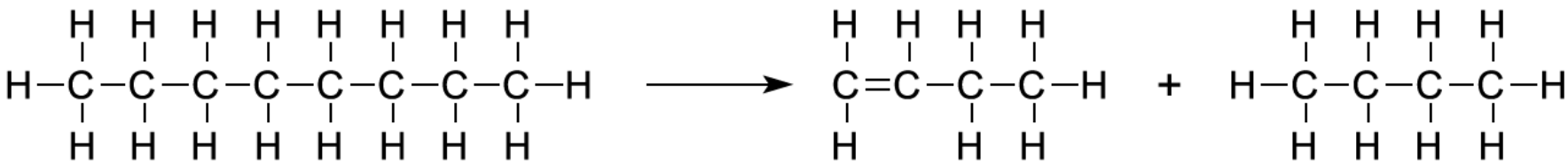
b) $C_8H_{18}(g) \rightarrow C_4H_8(g) + C_4H_{10}(g)$

Dades: Entalpies d'enllaç en kJ/mol *:* $(C=C)$ 619 ; $(C-H)$ 413 ; $(C-C)$ 348 ; $(O-H)$ 463 ; $(O=O)$ 494 ; $(C=O)$ 707 .

S: a) $-927\,kJ$; *b)* $77\,kJ$



$$\Delta H^0 = \Delta H^0_{[C=C]} + 4\cdot\Delta H^0_{[C-H]} + 3\cdot\Delta H^0_{[O=O]} - \left(4\cdot\Delta H^0_{[C=O]} + 4\cdot\Delta H^0_{[O-H]}\right)$$



$$\Delta H^0 = 7\cdot\Delta H^0_{[C-C]} + 18\cdot\Delta H^0_{[C-H]} - \left(\Delta H^0_{[C=C]} + 5\cdot\Delta H^0_{[C-C]} + 18\cdot\Delta H^0_{[C-H]}\right)$$

$$\Delta H^0 = 2\cdot\Delta H^0_{[C-C]} - \Delta H^0_{[C=C]}$$