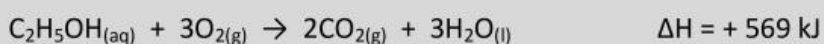


LATIHAN 6

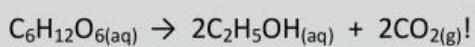
Jawablah pertanyaan berikut dengan benar di lembar kerja yang disediakan!



1. Diketahui reaksi:



Hitunglah nilai perubahan entalpi dari reaksi:



Reaksi 1 _____ + $6\text{O}_{2(\text{g})}$ → _____ + _____ $\Delta H =$ _____

Reaksi 2 _____ + _____ → _____ + $3\text{O}_{2(\text{g})}$ $\Delta H =$ _____

Perubahan entalpi reaksi:

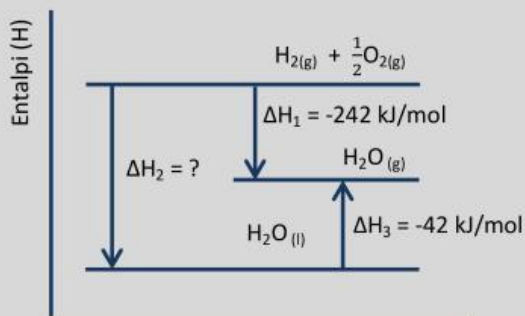
Reaksi 1 _____ + _____ → _____ + _____ $\Delta H =$ _____

Reaksi 2 _____ + _____ → _____ + _____ $\Delta H =$ _____

_____ + _____ → _____ + _____ $\Delta H =$ _____



2. Perhatikan diagram energi berikut!



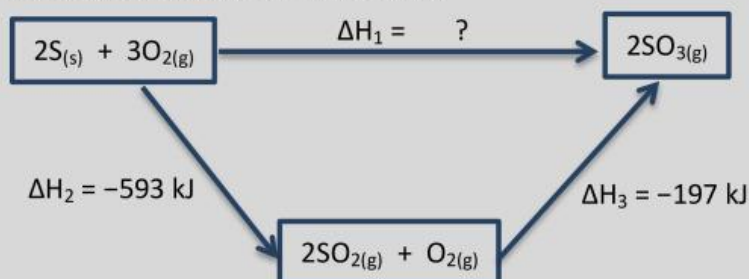
Tentukanlah nilai ΔH_2 !

$$\Delta H_1 = \Delta H_2 + \Delta H_3$$

$$\Delta H_2 = \Delta H_1 - \Delta H_3$$

$$\Delta H_2 = \underline{\hspace{2cm}}$$

3. Diketahui diagram siklus energi berikut:



Hitunglah nilai ΔH_1 !

$$\Delta H_1 = \Delta H_2 + \Delta H_3$$

$$\Delta H_1 = \underline{\hspace{2cm}}$$

$$\Delta H_1 = \underline{\hspace{2cm}}$$

4. Diketahui:

$$\Delta H_f^\circ \text{C}_2\text{H}_5\text{OH} = -266 \text{ kJ/mol}$$

$$\Delta H_f^\circ \text{CO}_2 = -394 \text{ kJ/mol}$$

$$\Delta H_f^\circ \text{H}_2\text{O} = -286 \text{ kJ/mol}$$

Tentukanlah besarnya perubahan entalpi reaksi pada pembakaran sempurna etanol menurut reaksi: $\text{C}_2\text{H}_5\text{OH} + 3\text{O}_2 \rightarrow 2\text{CO}_2 + 3\text{H}_2\text{O}$!

$$\Delta H \text{ reaksi} = (\sum \Delta H_f^\circ \text{produk}) - (\sum \Delta H_f^\circ \text{reaktan})$$

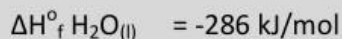
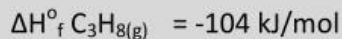
$$\Delta H \text{ reaksi} = (\underline{\hspace{1cm}} \Delta H_f^\circ \text{CO}_2 + \underline{\hspace{1cm}} \Delta H_f^\circ \text{H}_2\text{O}) - (\underline{\hspace{1cm}} \Delta H_f^\circ \text{C}_2\text{H}_5\text{OH} + \underline{\hspace{1cm}} \Delta H_f^\circ \text{O}_2)$$

$$\Delta H \text{ reaksi} = (\underline{\hspace{1cm}} + \underline{\hspace{1cm}}) - (\underline{\hspace{1cm}} + \underline{\hspace{1cm}})$$

$$\Delta H \text{ reaksi} = \underline{\hspace{2cm}} - \underline{\hspace{2cm}}$$

$$\Delta H \text{ reaksi} = \underline{\hspace{2cm}}$$

5. Diketahui:



Tentukanlah perubahan entalpi reaksi $\text{C}_3\text{H}_{8(g)} + 5\text{O}_{2(g)} \rightarrow 3\text{CO}_{2(g)} + 4\text{H}_2\text{O}_{(l)}$!

$$\Delta H \text{ reaksi} = (\sum \Delta H_f^\circ \text{ produk}) - (\sum \Delta H_f^\circ \text{ reaktan})$$

$$\Delta H \text{ reaksi} = (___ \Delta H_f^\circ \text{CO}_2 + ___ \Delta H_f^\circ \text{H}_2\text{O}) - (___ \Delta H_f^\circ \text{C}_3\text{H}_8 + ___ \Delta H_f^\circ \text{O}_2)$$

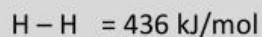
$$\Delta H \text{ reaksi} = (______ + ______) - (______ + ______)$$

$$\Delta H \text{ reaksi} = ______ - ______$$

$$\Delta H \text{ reaksi} = ______$$



6. Diketahui energi ikatan:



Tentukanlah nilai perubahan entalpi reaksi $\text{C}_2\text{H}_{4(g)} + \text{H}_{2(g)} \rightarrow \text{C}_2\text{H}_{6(g)}$!

$$\Delta H \text{ reaksi} = (\sum E_{\text{pemutusan ikatan}}) - (\sum E_{\text{pembentukan ikatan}})$$

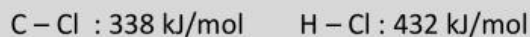
$$\Delta H \text{ reaksi} = (___ \text{C} - \text{H} + ___ \text{C} = \text{C} + ___ \text{H} - \text{H}) - (___ \text{C} - \text{H} + ___ \text{C} - \text{C})$$

$$\Delta H \text{ reaksi} = ______ - ______$$

$$\Delta H \text{ reaksi} = ______$$



7. Diketahui energi ikatan:



Hitunglah perubahan entalpi reaksi $\text{CH}_4 + 4\text{Cl}_2 \rightarrow \text{CCl}_4 + 4\text{HCl}$!

$$\Delta H \text{ reaksi} = (\sum E_{\text{pemutusan ikatan}}) - (\sum E_{\text{pembentukan ikatan}})$$

$$\Delta H \text{ reaksi} = (___ \text{C} - \text{H} + ___ \text{Cl} - \text{Cl}) - (___ \text{C} - \text{Cl} + ___ \text{H} - \text{Cl})$$

$$\Delta H \text{ reaksi} = ______ - ______$$

$$\Delta H \text{ reaksi} = ______$$

