

### LATIHAN 6

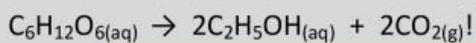
Jawablah pertanyaan berikut dengan benar di lembar kerja yang disediakan!



1. Diketahui reaksi:



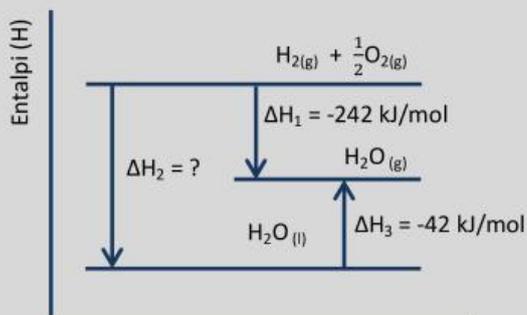
Hitunglah nilai perubahan entalpi dari reaksi:



Perubahan entalpi reaksi:



2. Perhatikan diagram energi berikut!



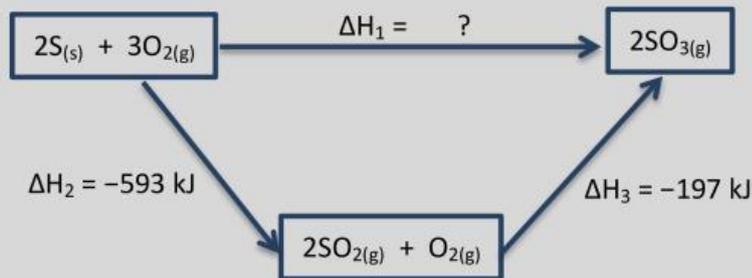
Tentukanlah nilai ΔH<sub>2</sub>!

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

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

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

3. Diketahui diagram siklus energi berikut:



Hitunglah nilai  $\Delta H_1$ !

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

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

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



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:  $\text{C}_2\text{H}_5\text{OH} + 3\text{O}_2 \rightarrow 2\text{CO}_2 + 3\text{H}_2\text{O}$ !

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

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

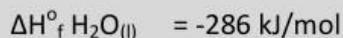
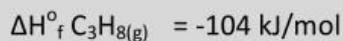
$$\Delta H \text{ reaksi} = ( \_ + \_ ) - ( \_ + \_ )$$

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

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



5. Diketahui:



Tentukanlah perubahan entalpi reaksi  $\text{C}_3\text{H}_8(\text{g}) + 5\text{O}_2(\text{g}) \rightarrow 3\text{CO}_2(\text{g}) + 4\text{H}_2\text{O}(\text{l})$  !

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

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

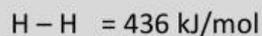
$$\Delta H \text{ reaksi} = ( \_\_\_\_\_\_ + \_\_\_\_\_\_ ) - ( \_\_\_\_\_\_ + \_\_\_\_\_\_ )$$

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

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



6. Diketahui energi ikatan:



Tentukanlah nilai perubahan entalpi reaksi  $\text{C}_2\text{H}_4(\text{g}) + \text{H}_2(\text{g}) \rightarrow \text{C}_2\text{H}_6(\text{g})$  !

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

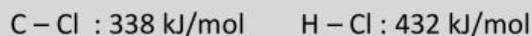
$$\Delta H \text{ reaksi} = ( \_\_ \text{C} - \text{H} + \_\_ \text{C} = \text{C} + \_\_ \text{H} - \text{H} ) - ( \_\_ \text{C} - \text{H} + \_\_ \text{C} - \text{C} )$$

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

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



7. Diketahui energi ikatan:



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

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

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

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

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

