

Heat of Reaction – Table I questions

Types of reactions:

Combustion, Synthesis, Ionization, Neutralization

Tell what type of reaction each of the following are using table I

	<u>Reaction Type</u>	<u>Exo /Endo</u>
1. $\text{H}^+(\text{aq}) + \text{OH}^-(\text{aq}) \rightarrow \text{H}_2\text{O}(\text{l})$	_____	_____
2. $2\text{C}(\text{s}) + \text{H}_2(\text{g}) \rightarrow \text{C}_2\text{H}_2(\text{g})$	_____	_____
3. $\text{N}_2(\text{g}) + \text{O}_2(\text{g}) \rightarrow 2\text{NO}(\text{g})$	_____	_____
4. $2\text{C}_8\text{H}_{18}(\text{s}) + 25\text{O}_2(\text{g}) \rightarrow 16\text{CO}_2(\text{g}) + 18\text{H}_2\text{O}(\text{l})$	_____	_____
5. $\text{C}(\text{s}) + \text{O}_2(\text{g}) \rightarrow \text{CO}_2(\text{g})$	_____	_____
6. $\text{NaCl}(\text{s}) \rightarrow \text{Na}^+(\text{aq}) + \text{Cl}^-(\text{aq})$	_____	_____
7. $2\text{H}_2(\text{g}) + \text{O}_2(\text{g}) \rightarrow 2\text{H}_2\text{O}(\text{g})$	_____	_____
8. $\text{C}_6\text{H}_{12}\text{O}_6(\text{s}) + 6\text{O}_2(\text{g}) \rightarrow 6\text{CO}_2(\text{g}) + 6\text{H}_2\text{O}(\text{l})$	_____	_____
9. $\text{KNO}_3(\text{s}) \rightarrow \text{K}^+(\text{aq}) + \text{NO}_3^-(\text{aq})$	_____	_____

10. If 1 mole of CO is reacted with $\frac{1}{2}$ O₂, how much energy is released ?

11. If C₂H₆ is decomposed to form 2C + 3H₂ is energy released or absorbed ?
How much?

12. Draw the potential energy diagram for # 5 above. Label the two axis, activation energy, activated complex, reactants, products, heat of reaction.

