

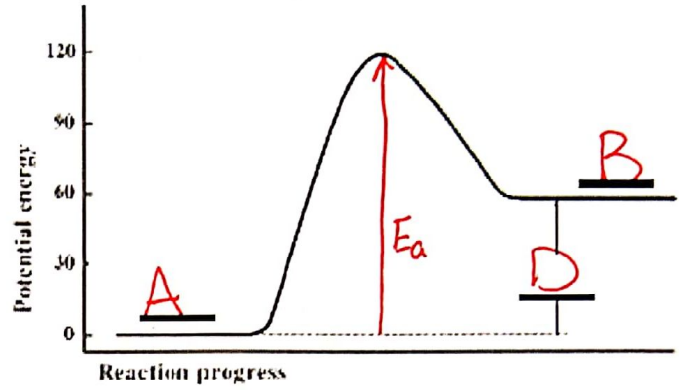
Reaction Energy Worksheet

Name: KEY

Per: _____

1) Fill in the blanks on the reaction coordinate diagram with the appropriate letters. Not all letters will be used.

- A) Reactants
- B) Products
- C) ~~ΔH released~~
- D) ΔH absorbed



2) Label the activation energy in the diagram. (E_a)

Specify whether the following is Endo or Exo:

- 3) endo The reaction in the diagram above.
- 4) exo The burning of wood to produce a hot flame.
- 5) exo $4\text{Fe} + 3\text{O}_2 \rightarrow 2\text{Fe}_2\text{O}_3 + \text{Energy}$
- 6) endo A test tube that feels cold to the touch after two substances have been mixed.
- 7) endo When two chemicals mix their temperature rises. energy absorbed
- 8) exo A solid burns brightly and releases heat, light and sound.
- 9) endo $2\text{Fe} + 3\text{CO}_2 + \boxed{26.8 \text{ kJ}} \rightarrow \text{Fe}_2\text{O}_3 + 3\text{CO}$ energy added
- 10) exo $\text{BCl}_3 + 3\text{H}_2\text{O} \rightarrow \text{HBO}_3 + 3\text{HCl}$ $\Delta H = -112 \text{ kJ}$ energy released
- 11) exo When two chemicals are mixed their temperature drops. energy released / lost
- 12) endo Two chemicals will only react if you heat them continually.
- 13) endo Plants take in light energy for photosynthesis.
- 14) exo A test tube that feels hot to the touch after two substances have been mixed.
- 15) exo $\text{C}_2\text{H}_4 \rightarrow 2\text{C} + 2\text{H}_2 + \boxed{52.3 \text{ kJ}}$ energy released
- 16) endo $2\text{HgO} \rightarrow 2\text{Hg} + \text{O}_2$ $\Delta H = +181 \text{ kJ}$ energy added

Use the diagram to the right to answer the following:

- 17) What is the value of $E_{\text{Reactants}}$? 160 kJ
- 18) What is the value of E_{Products} ? 80 kJ
- 19) What is the value of E_{AC} ? 240 kJ
- 20) What is the value of E_a ? (240-160) 80 kJ
- 21) What is the value of ΔH ? (160-80) 80 kJ
- 22) Is the reaction endo or exo? exo

