

Answer on separate paper showing all work.

1. Consider the following equation :



- How many moles of  $\text{I}_4\text{F}_2$  are produced by the complete reaction of 5.41 moles of fluorine ?
- How many moles of fluorine are needed to produce 4.52 moles of  $\text{IF}_5$  ?
- What mass of iodine is needed to react with 7.63 grams of fluorine ?
- What mass of  $\text{IF}_5$  is produced by the reaction of 154 grams of iodine ?



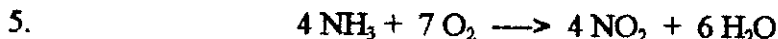
- What mass of BOTH products (separately) are formed when 105 g of pentane ( $\text{C}_5\text{H}_{12}$ ) are burned ?
- What mass of oxygen is needed to produce 66.0 g of water, according to the above reaction ?
- What mass of pentane would release 107 g of  $\text{CO}_2$  ?



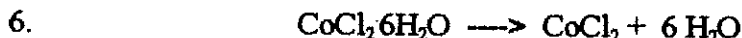
- What mass of carbon disulfide is produced by reacting 241 g of carbon ?
- If we wish to produce 7.60 g of carbon disulfide, what mass of carbon should we use ? What mass of sulfur dioxide should we also use ? What mass of carbon monoxide would be produced as well ?



What mass of copper would result from decomposing 101 grams of cupric oxide ?



What mass of water is produced by the reaction of 3.40 grams of ammonia according to the above reaction ?



If you used 4.67 g of the hydrate, what mass of water would be driven off ?

answers:

- |     |                            |     |                      |
|-----|----------------------------|-----|----------------------|
| 1a) | 0.902 mole                 | 3a) | 306 g                |
| b)  | 13.6 moles                 | b)  | 5.98 g C             |
| c)  | 25.5 g $\text{I}_2$        |     | 12.8 g $\text{SO}_2$ |
| d)  | 89.8 g                     |     | 11.2 g CO            |
| 2a) | 321 g $\text{CO}_2$        | 4)  | 80.7 g               |
|     | 157 g $\text{H}_2\text{O}$ | 5)  | 5.40 g               |
| b)  | 156 g                      | 6)  | 2.12 g               |
| c)  | 35.0 g                     |     |                      |