Name:
Period: $\qquad$ Date: $\qquad$

$$
3 \mathrm{Ca}(\mathrm{OH})_{2(\mathrm{aq})}+2 \mathrm{H}_{3} \mathrm{PO}_{4(\mathrm{aq})} \rightarrow \mathrm{Ca}_{3}\left(\mathrm{PO}_{4}\right)_{2(\mathrm{~s})}+6 \mathrm{H}_{2} \mathrm{O}_{(\mathrm{I})}
$$

Consider the chemical reaction mentioned above to answer questions 1-10.

| Questions | Answers |
| :---: | :---: |
| 1. What are the reactants? |  |
| 2. What are the products? |  |
| 3. What does (aq) mean in the context of this chemical reaction? |  |
| 4. If there is a precipitate in the reaction, please mention it here. If there is no precipitate, just write, there is no precipitate. |  |
| 5. What does the (I) mean in the context of this chemical reaction? |  |
| 6. What is the total number of oxygen atoms in the product side of this chemical reaction? |  |
| 7. How many hydroxides are in $3 \mathrm{Ca}(\mathrm{OH})_{2}$ ? |  |
| 8. How many oxygen atoms are in $3 \mathrm{Ca}(\mathrm{OH})_{2}$ ? |  |
| 9. How many phosphorus atoms are in $\mathrm{Ca}_{3}\left(\mathrm{PO}_{4}\right)_{2}$ ? |  |
| 10. How many phosphates are in $\mathrm{Ca}_{3}\left(\mathrm{PO}_{4}\right)_{2}$ ? |  |

11. What is the molar mass of $\mathrm{Ca}_{3}\left(\mathrm{PO}_{4}\right)_{2}$ ? Make sure you mention units.

Show your work here:

Answer:
12. Balance the following chemical equations and determine which type of reaction they are.

| Chemical reaction | Type of chemical reaction |
| :---: | :---: |
| a)___ $\mathrm{H}_{2}+\ldots \ldots \ldots \mathrm{H}_{2} \mathrm{O}+\ldots \mathrm{N}_{2}$ |  |
| b) $\ldots \ldots \mathrm{Na}_{3} \mathrm{PO}_{4}^{+} \ldots \ldots \mathrm{CaCl}_{2} \rightarrow \ldots \mathrm{NaCl}+\ldots \mathrm{Ca}_{3}\left(\mathrm{PO}_{4}\right)_{2}$ |  |
| c) $\qquad$ $\mathrm{P}_{4} \mathrm{O}_{2}+$ $\qquad$ $\mathrm{O}_{2} \rightarrow$ $\qquad$ $\mathrm{P}_{2} \mathrm{O}_{5}$ |  |
| d) $\ldots_{[ } \mathrm{C}_{3} \mathrm{H}_{8}+\ldots \mathrm{O}_{2} \rightarrow \ldots \mathrm{CO}_{2}+\ldots \ldots \mathrm{H}_{2} \mathrm{O}$ |  |

