## Answer on Question \#76962, Chemistry / Organic Chemistry

## Question:

What are the coefficients to make the following equation balanced? Why?
$\mathrm{Mg}_{2} \mathrm{~N}_{2}(\mathrm{aq})+\mathrm{H}_{2} \mathrm{O}(\mathrm{I}) \rightarrow \mathrm{NH}_{3}(\mathrm{~g})+\mathrm{Mg}(\mathrm{OH})_{2}(\mathrm{aq})$

## Answer:

There is a misprint in the task. It must be $\mathbf{M g}_{3} \underline{\mathbf{N}}_{\mathbf{2}}$.
In the balanced equation the quantities of atoms of reagents must be equal to quantities of atoms of products (for each chemical element). So:

$$
\mathrm{Mg}_{3} \mathrm{~N}_{2}(\mathrm{aq})+\mathbf{6} \mathrm{H}_{2} \mathrm{O}(\mathrm{I}) \rightarrow \mathbf{2} \mathrm{NH}_{3}(\mathrm{~g})+\mathbf{3} \mathrm{Mg}(\mathrm{OH})_{2}(\mathrm{aq})
$$

We have 3 atoms of Mg before and 3 after, 12 atoms of hydrogen before and 12 after, and so on.

