When the following equations are balanced using the smallest possible integers, what is the number in front of the underlined substance in each case?

1. $\mathrm{C}_{3} \mathrm{H}_{8}(g)+\mathrm{O}_{2}(g) \rightarrow \mathrm{CO}_{2}(g)+\mathrm{H}_{2} \mathrm{O}(g)$
[A] 3
[B] 2
[C] 6
[D] 4
[E] 5
2. $\mathrm{H}_{3} \mathrm{PO}_{4}(a q)+\mathrm{Ca}(\mathrm{OH})_{2}(a q) \rightarrow \mathrm{Ca}_{3}\left(\mathrm{PO}_{4}\right)_{2}(a q)+\mathrm{H}_{2} \mathrm{O}(\mathrm{l})$
[A] 5
[B] 4
[C] 6
[D] 3
[E] 2
3. $\mathrm{MgO}(s) \rightarrow \mathrm{Mg}(s)+\mathrm{O}_{2}(g)$
[A] 2
[B] 4
[C] 3
[D] 6
[E] 5
4. $\mathrm{Al}(\mathrm{s})+\mathrm{O}_{2}(g) \rightarrow \mathrm{Al}_{2} \mathrm{O}_{3}(\mathrm{~s})$
[A] 2
[B] 6
[C] 3
[D] 4
[E] 5
5. $\mathrm{HCl}(a q)+\mathrm{Mg}(\mathrm{OH})_{2}(a q) \rightarrow \mathrm{MgCl}_{2}(a q)+\mathrm{H}_{2} \mathrm{O}(\mathrm{l})$
[A] 3
[B] 1
[C] 4
[D] 2
[E] 5
6. $\mathrm{SO}_{2}(g)+\mathrm{O}_{2}(g) \rightarrow \mathrm{SO}_{3}(g)$
[A] 2
[B] 4
[C] 5
[D] 1
[E] 3
7. The sum of the coefficients when the following equation is balanced is $\mathrm{BaSO}_{4}+\mathrm{K}_{3} \mathrm{PO}_{4} \rightarrow \mathrm{Ba}_{3}\left(\mathrm{PO}_{4}\right)_{2}+\mathrm{K}_{2} \mathrm{SO}_{4}$
[A] 11
[B] 9
[C] 7
[D] 4
[E] 8
8. Determine the coefficient for $\mathrm{O}_{2}$ when the following equation is balanced in standard form (smallest whole number integers). $\mathrm{C}_{4} \mathrm{H}_{10}(g)+\mathrm{O}_{2}(g) \rightarrow \mathrm{CO}_{2}(g)+\mathrm{H}_{2} \mathrm{O}(g)$
[A] 13
[B] 4
[C] 10
[D] 20
[E] 8

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9. $\underline{\mathrm{Sb}(s)}+\mathrm{O}_{2}(g) \rightarrow \mathrm{Sb}_{2} \mathrm{O}_{5}(\mathrm{~s})$
[A] 6
[B] 1
[C] 4
[D] 12
[E] 2
10. $\mathrm{C}_{4} \mathrm{H}_{10}(g)+\mathrm{O}_{2}(g) \rightarrow \underline{\mathrm{CO}_{2}}(g)+\mathrm{H}_{2} \mathrm{O}(g)$
[A] 8
[B] 2
[C] 4
[D] 10
[E] 6

When the following equations are balanced using the smallest possible integers, what is the number in front of the underlined substance in each case?
11. $\mathrm{CH}_{3} \mathrm{OH}(\mathrm{l})+\mathrm{O}_{2}(\mathrm{~g}) \rightarrow \mathrm{CO}_{2}(\mathrm{~g})+\underline{\mathrm{H}_{2} \mathrm{O}(g)}$
[A] 6
[B] 12
[C] 1
[D] 2
[E] 4
12. Balance the equation
$\mathrm{Pb}\left(\mathrm{NO}_{3}\right)_{2}(a q)+\mathrm{K}_{2} \mathrm{CrO}_{4}(a q) \rightarrow \mathrm{PbCrO}_{4}(s)+\mathrm{KNO}_{3}(a q)$
13. Balance the equation
$\left(\mathrm{NH}_{4}\right)_{2} \mathrm{Cr}_{2} \mathrm{O}_{7}(\mathrm{~s}) \rightarrow \mathrm{N}_{2}(\mathrm{~g})+\mathrm{H}_{2} \mathrm{O}(g)+\mathrm{Cr}_{2} \mathrm{O}_{3}(\mathrm{~s})$
[1] [E]
[2] [C]
[3] [A]
[4] [C]
[5] [B]
[6] [A]
[7] [B]
[8] [A]
[9] [C]
[10] [A]
[11] [E]
[12] $\mathrm{Pb}\left(\mathrm{NO}_{3}\right)_{2}(a q)+\mathrm{K}_{2} \mathrm{CrO}_{4}(a q) \rightarrow \mathrm{PbCrO}_{4}(s)+2 \mathrm{KNO}_{3}(a q)$
[13] $\left(\mathrm{NH}_{4}\right)_{2} \mathrm{Cr}_{2} \mathrm{O}_{7}(\mathrm{~s}) \rightarrow \mathrm{N}_{2}(\mathrm{~g})+4 \mathrm{H}_{2} \mathrm{O}(g)+\mathrm{Cr}_{2} \mathrm{O}_{3}(\mathrm{~s})$

