## Astronomy Ranking Task: <br> Chemical Reactions

## Exercise \#3

Description: The following are all unbalanced chemical reaction equations.
A. $\mathrm{CH}_{4}+\mathrm{O}_{2} \rightarrow \mathrm{CO}_{2}+\mathrm{H}_{2} \mathrm{O}$
B. $\mathrm{C}_{4} \mathrm{H}_{10}+\mathrm{O}_{2} \rightarrow \mathrm{CO}_{2}+\mathrm{H}_{2} \mathrm{O}$
C. $\mathrm{C}_{3} \mathrm{H}_{8}+\mathrm{O}_{2} \rightarrow \mathrm{CO}_{2}+\mathrm{H}_{2} \mathrm{O}$
D. $\mathrm{C}_{8} \mathrm{H}_{18}+\mathrm{O}_{2} \rightarrow \mathrm{CO}_{2}+\mathrm{H}_{2} \mathrm{O}$
A. Ranking instructions: When the equations are properly balanced, rank the total number of oxygen atoms in each balanced reaction.

Ranking Order: Most 1 $\qquad$ 2 $\qquad$ 3 $\qquad$ 4 $\qquad$ Least

Or, all of the balanced reactions involve the same total number of oxygen atoms. $\qquad$ (indicate with a check mark)

Carefully explain your reasoning for ranking this way:
$\qquad$
$\qquad$
$\qquad$
$\qquad$
B. Ranking instructions: When the equations are properly balanced, rank the total number of hydrogen atoms in each balanced reaction.

Ranking Order: Most 1 $\qquad$ 2 $\qquad$ 3 $\qquad$ 4 $\qquad$ Least

Or, all of the balanced reactions involve the same total number of hydrogen atoms. $\qquad$ (indicate with a check mark)

Carefully explain your reasoning for ranking this way:
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
C. Ranking instructions: When the equations are properly balanced, rank the total number of carbon atoms in each balanced reaction.

Ranking Order: Most $1 \ldots \ldots$ ___ ${ }^{2}{ }^{4}$
Or, all of the balanced reactions involve the same total number of carbon atoms. $\qquad$ (indicate with a check mark)

Carefully explain your reasoning for ranking this way:

