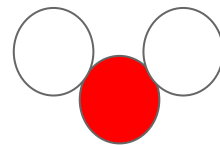
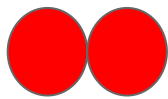
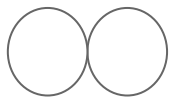


Balancing Equations

Answer Key by Liz Belasic & Dr. Loney

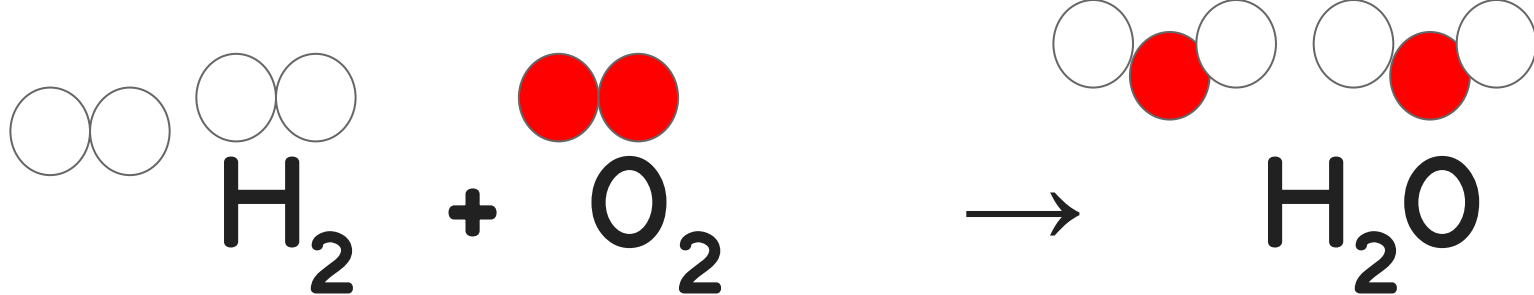


Balance this equation



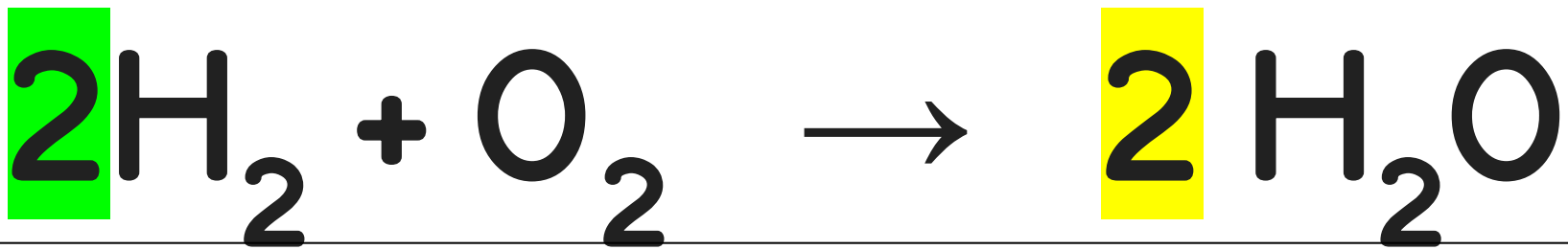
<u>Elements</u>	<u>Left Side</u>	<u>Right Side</u>
Hydrogen	2	2 ^{x2} = 4
Oxygen	2	1 ^{x2} = 2

1. LOOK FOR ONE UNBALANCED ELEMENT AND MULTIPLY ONE SIDE BY A COEFFICIENT THAT WILL BALANCE IT.
2. IF THE ELEMENT IS IN A COMPOUND, YOU NEED TO MULTIPLY THE OTHER ELEMENT(S) IN THE THE COMPOUND BY THE SAME COEFFICIENT. You can see TWO H_2O represented now.
3. REPEAT STEPS 1 & 2 Until Balanced. USE THE FINAL COEFFICIENTS IN FRONT OF THE COMPOUNDS/ELEMENTS IN THE EQUATION.



<u>Elements</u>	<u>Left Side</u>	<u>Right Side</u>
Hydrogen	2 ^{x2} = 4	2 ^{x2} = 4
Oxygen	2	1 ^{x2} = 2

1. LOOK FOR ONE UNBALANCED ELEMENT AND MULTIPLY ONE SIDE BY A COEFFICIENT THAT WILL BALANCE IT.
2. IF THE ELEMENT IS IN A COMPOUND, YOU NEED TO MULTIPLY THE OTHER ELEMENT(S) IN THE THE COMPOUND BY THE SAME COEFFICIENT. You can see TWO H_2 represented now.
3. REPEAT STEPS 1 & 2 Until Balanced. USE THE FINAL COEFFICIENTS IN FRONT OF THE COMPOUNDS/ELEMENTS IN THE EQUATION.



<u>Elements</u>	<u>Left Side</u>	<u>Right Side</u>
Hydrogen	$2 \times 2 = 4$	$2 \times 2 = 4$
Oxygen	2	$1 \times 2 = 2$

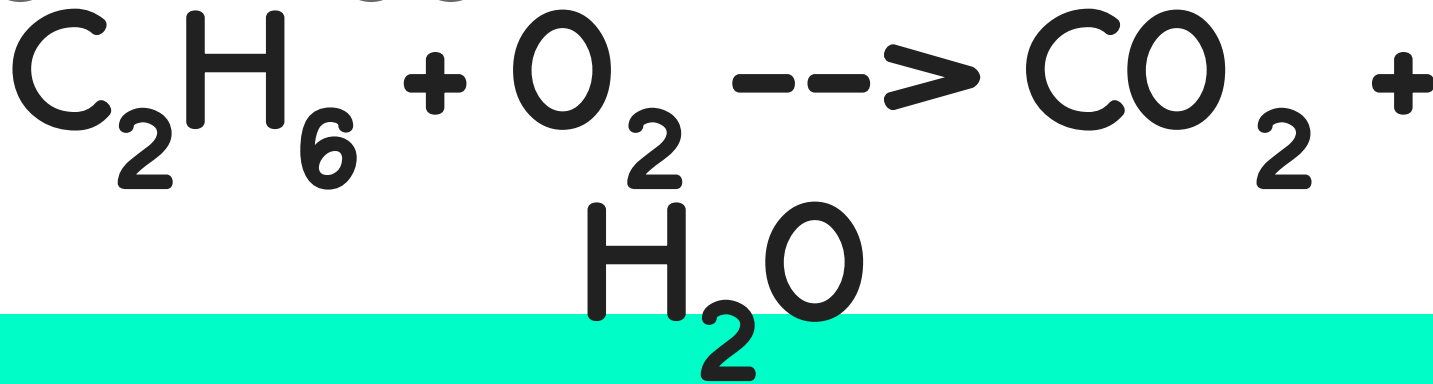
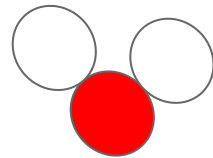
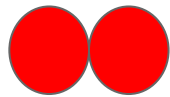
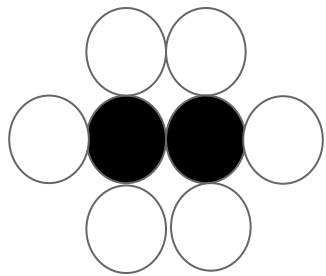
1. LOOK FOR ONE UNBALANCED ELEMENT AND MULTIPLY ONE SIDE BY A COEFFICIENT THAT WILL BALANCE IT.

2. IF THE ELEMENT IS IN A COMPOUND, YOU NEED TO MULTIPLY THE OTHER ELEMENT(S) IN THE THE COMPOUND BY THE SAME COEFFICIENT.

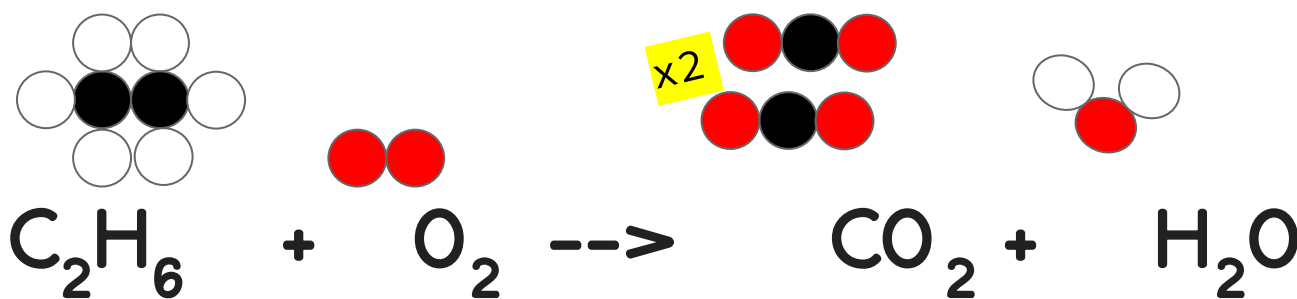
3. REPEAT STEPS 1 & 2 Until Balanced. USE THE FINAL COEFFICIENTS IN FRONT OF THE COMPOUNDS/ELEMENTS IN THE EQUATION.

Click to Reveal Answer

Answer



Balance this equation

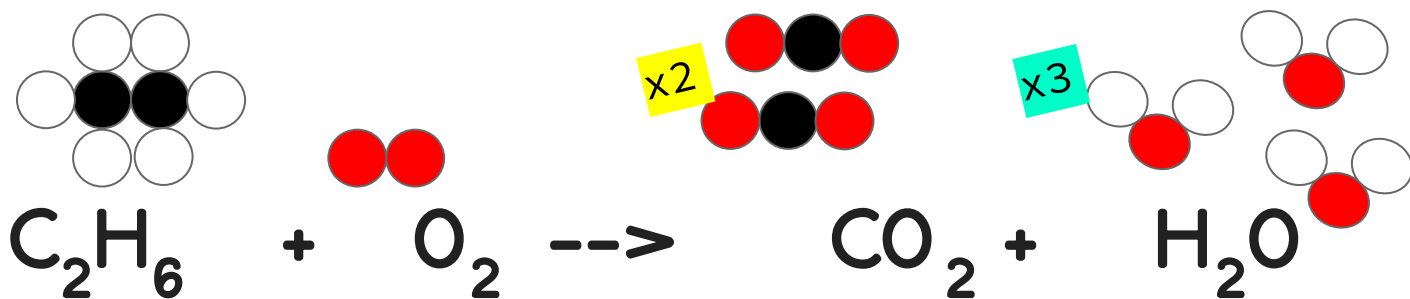


<u>Elements</u>	<u>Left Side</u>	<u>Right Side</u>
Carbon	2	1 $\times 2$ = 2
Hydrogen	6	2
Oxygen	2	2 $\times 2$ + 1 = 5

1. LOOK FOR ONE UNBALANCED ELEMENT AND MULTIPLY ONE SIDE BY A COEFFICIENT THAT WILL BALANCE IT.

2. IF THE ELEMENT IS IN A COMPOUND, YOU NEED TO MULTIPLY THE OTHER ELEMENT(S) IN THE THE COMPOUND BY THE SAME COEFFICIENT. You can see TWO CO_2 represented now.

3. REPEAT STEPS 1 & 2 Until Balanced. USE THE FINAL COEFFICIENTS IN FRONT OF THE COMPOUNDS/ELEMENTS IN THE EQUATION.



Elements

Left Side

Carbon

2

Hydrogen

6

Oxygen

2

Note it isn't possible to get an odd number of oxygen on left side.

Right Side

1 $\times 2$ = 2

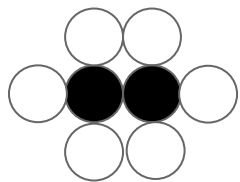
2 $\times 3$ = 6

2 $\times 2$ + 1 $\times 3$ = 7

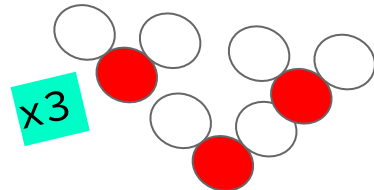
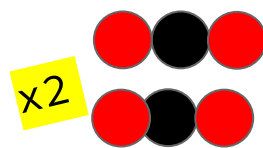
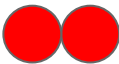
1. LOOK FOR ONE UNBALANCED ELEMENT AND MULTIPLY ONE SIDE BY A COEFFICIENT THAT WILL BALANCE IT.

2. IF THE ELEMENT IS IN A COMPOUND, YOU NEED TO MULTIPLY THE OTHER ELEMENT(S) IN THE THE COMPOUND BY THE SAME COEFFICIENT. YOU can see THREE H_2O represented now.

3. REPEAT STEPS 1 & 2 Until Balanced. USE THE FINAL COEFFICIENTS IN FRONT OF THE COMPOUNDS IN THE EQUATION.



Half an O_2 isn't possible



Elements

Left Side

Right Side

Carbon

2

1 $\times 2 = 2$

Hydrogen

6

2 $\times 3 = 6$

Oxygen

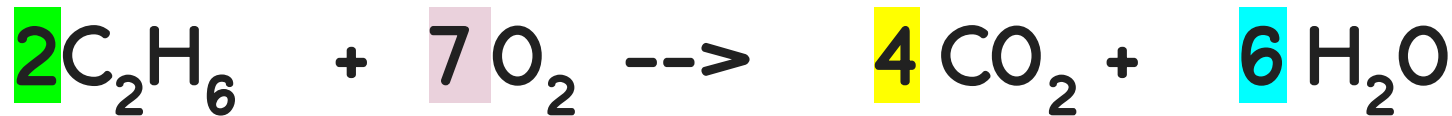
2 $\times 3.5 = 7$

2 $\times 2 + 1 \times 3 = 7$

The Trick:

- Multiply O_2 by a number that DOES balance with the opposite side
- Then multiply ALL coefficients by a common factor to yield whole numbers.

x2



Elements

Left Side

Right Side

Carbon

4

4

Hydrogen

12

12

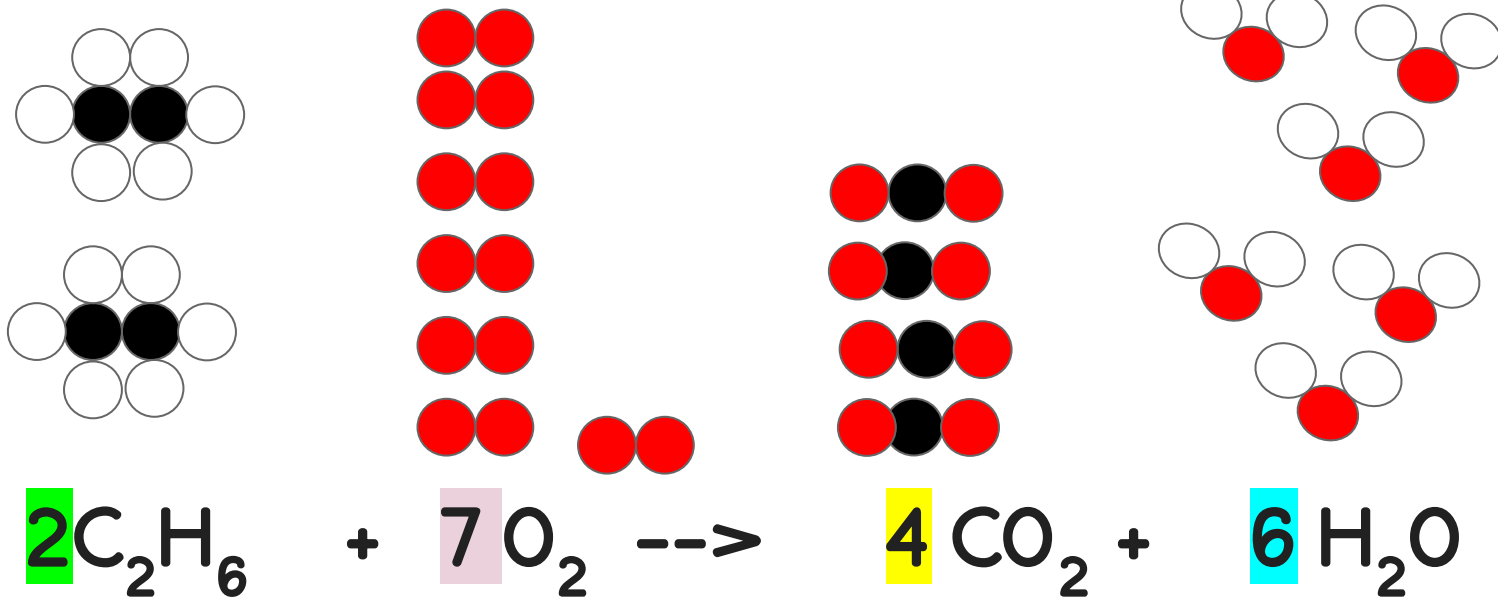
Oxygen

14

14

The Trick:

- Multiply O_2 by a number that DOES balance with the opposite side
- Then multiply ALL coefficients by a common factor to yield whole numbers.



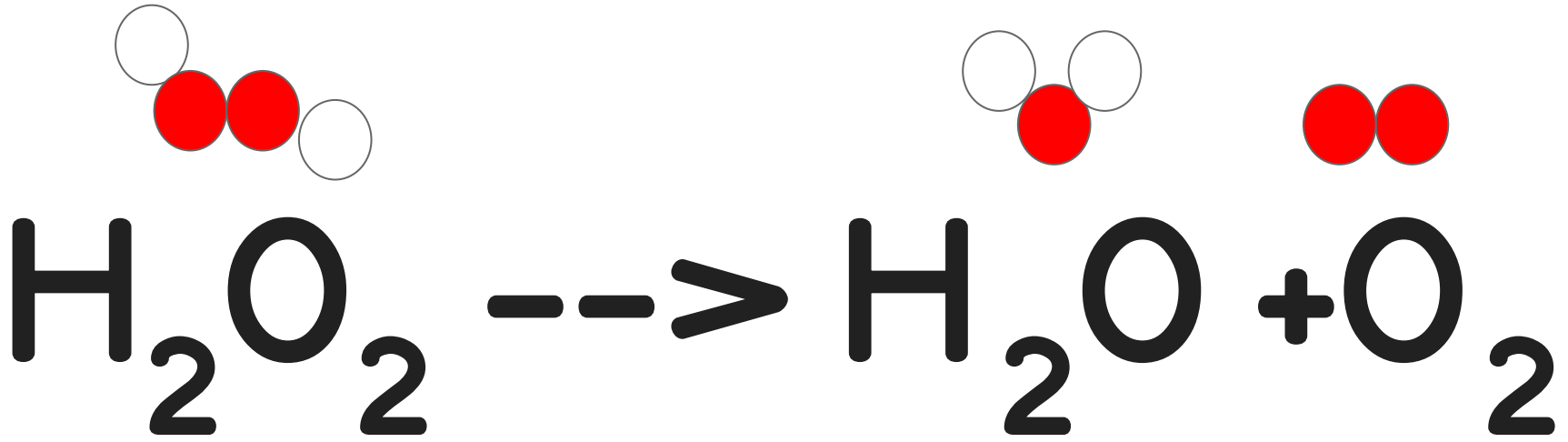
RECOUNT ALL TO CONFIRM ITS CORRECT

DON'T PANIC IF SOMETHING WAS BALANCED TO BEGIN WITH BUT THEN BECOMES UNBALANCED DURING THE PROCESS. IT WILL JUST HAVE TO BE BALANCED AGAIN. AND THAT'S OK!

Don't panic!!

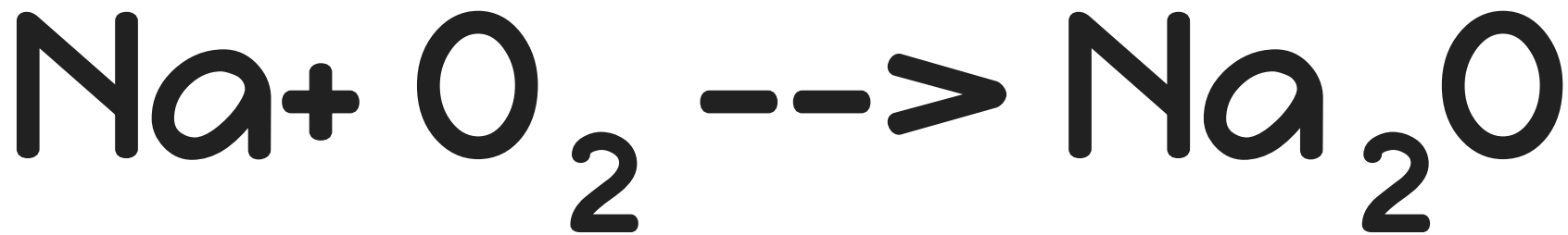
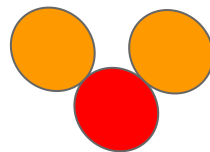
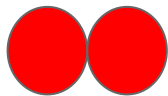
Metals -> Non-metals -> H -> O

Balancing Order



Click to Reveal Answer

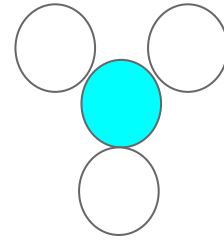
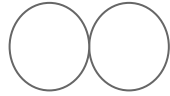
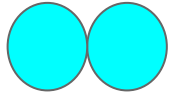
Answers



Balance this equation

Click to Reveal Answer

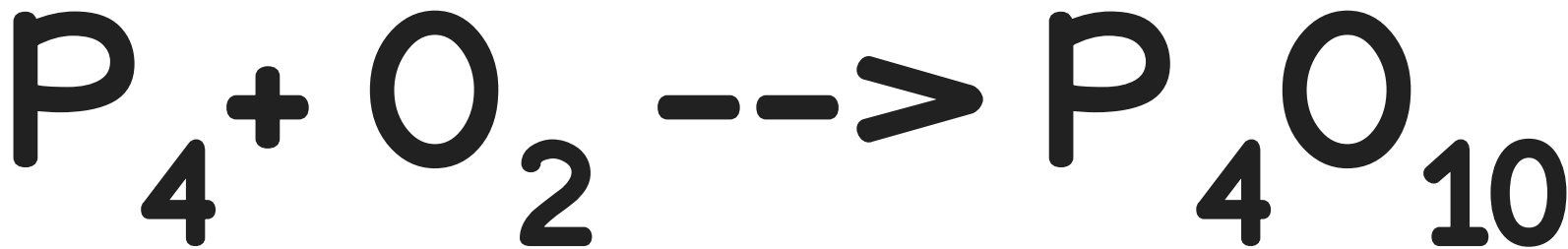
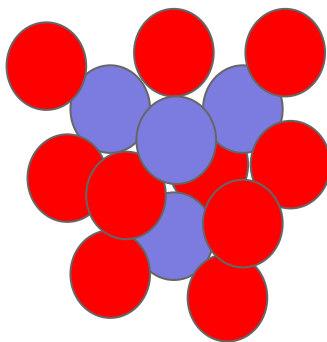
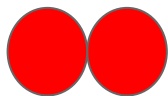
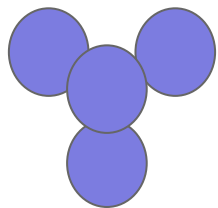
Answer



Balance this equation

Click to Reveal Answer

Answer



Balance this equation

Click to Reveal Answer

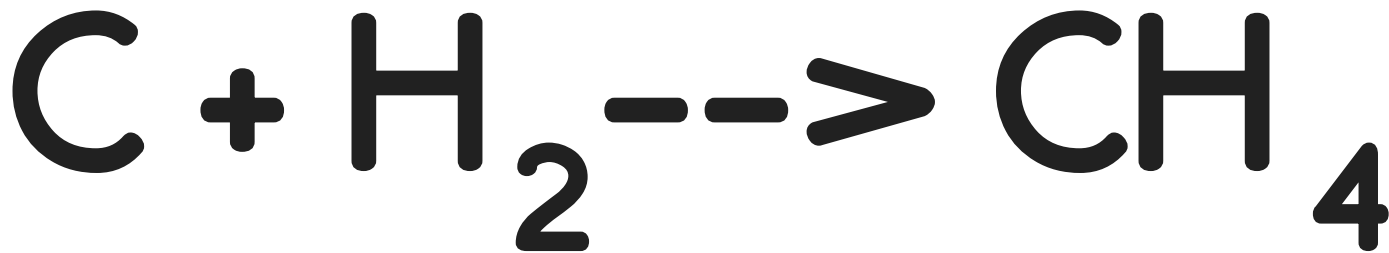
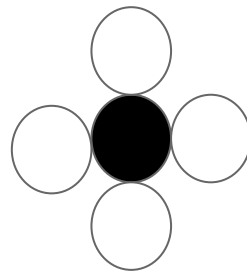
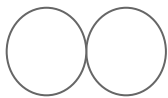
Answer



Balance this equation

Click to Reveal Answer

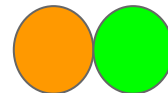
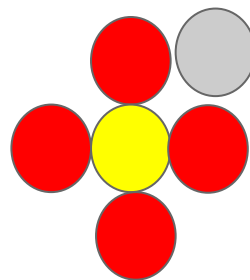
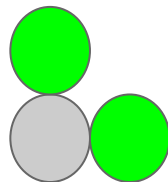
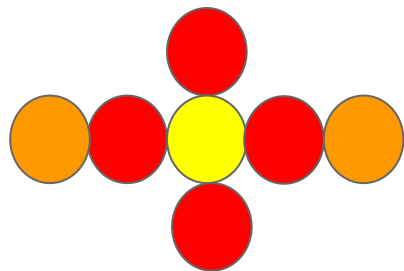
Answer



Balance this equation

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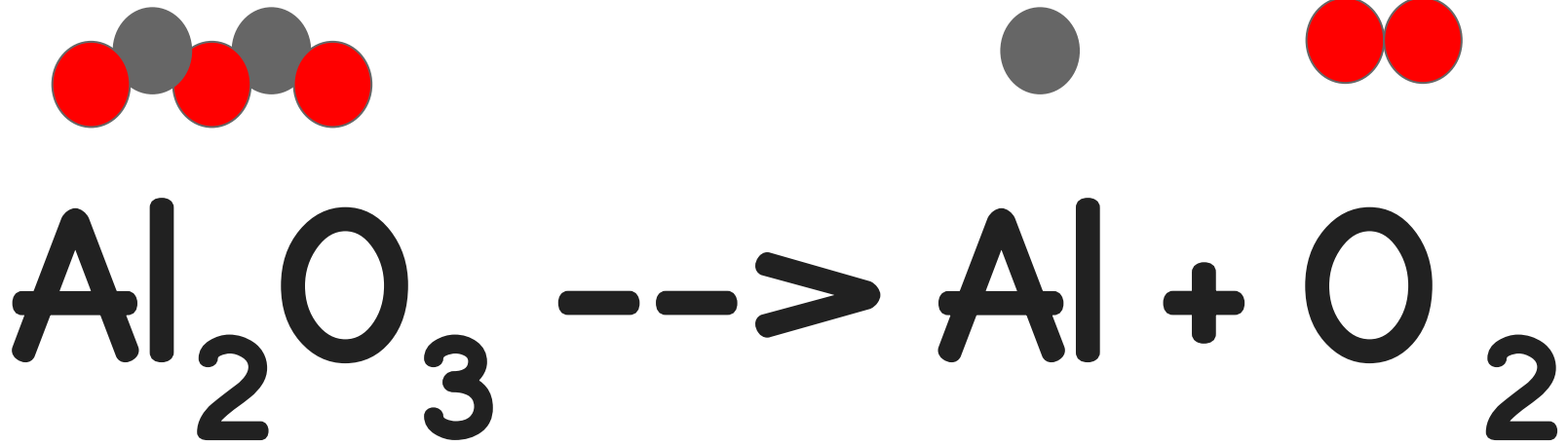
Answer



Balance this equation

Click to Reveal Answer

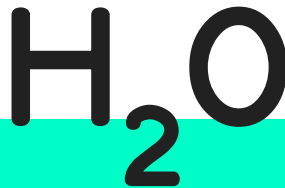
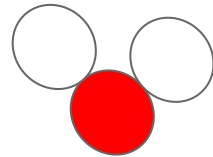
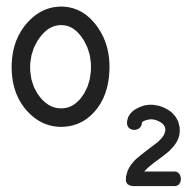
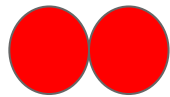
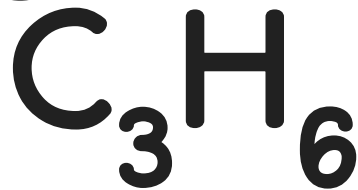
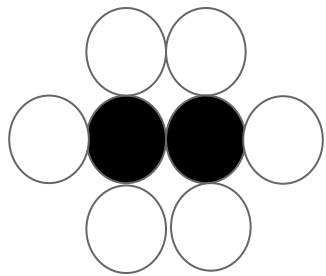
Answer



Balance this equation

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Answer



Balance this equation

Click to Reveal Answer

Answer