

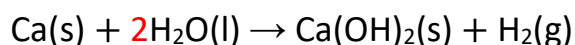
Name:

Class:



Calcium reacts with water to form calcium hydroxide and hydrogen.

Balance the following equation.



State **one** observation that would be made during the reaction.

Fizzing/ effervescence/ gas produced.

Give the molecular formula of ethene.



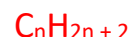
State the formula of a sulfate ion.



Name the two substances used to test for the presence of halide ions.

1. (dilute) Nitric acid/ HNO_3
2. Silver nitrate solution/ AgNO_3

State the general formula of an alkane.



Complete the equation for the cracking of dodecane by filling in the formula of the single molecule needed to balance the equation.



A sample of calcium bromide contains 0.2 g calcium and 0.8 g bromine by mass.

Calculate the empirical formula of calcium bromide.

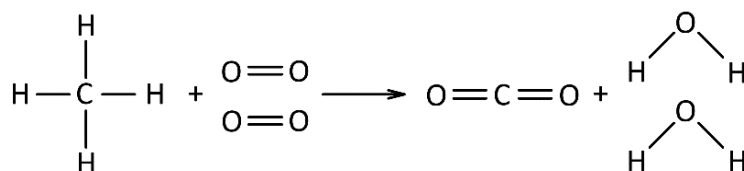
	Calcium	Bromine
Mass	0.2	0.8
Ar	40	80
Moles	0.005	0.01
Divide by smallest	1	2

Answer = **CaBr₂**

Combustion reactions produce a lot of heat energy.

Bond energies can be used to calculate the energy change in combustion reactions.

Methane reacts with oxygen. Carbon dioxide and water are made, as shown in the figure.



Bond	C-H	O=O	C=O	O-H
Bond energy (kJ / mol)	413	498	805	464

Calculate the total energy transferred to break the bonds in the reactants in the figure.

$$\text{Total energy transferred} = 4(413) + 2(498)$$

$$\text{Total energy transferred} = 1652 + 996$$

$$\text{Total energy transferred} = 2648 \text{ kJ/mol}$$