Answer all the questions below.

1 The relative atomic mass of an atom (A_r) is the mass of an atom compared to the mass of an atom of ^{12}C, use the periodic table to complete the table below.

Element/symbol	A_r	Element/symbol	A_r
hydrogen		lead	
helium		iodine	
carbon		copper	
nitrogen		potassium	
oxygen		calcium	
aluminium		phosphorus	

2 What is a molecule?

_____

3 Calculate the relative formula mass (M_r) then the mass of 1 mole for the following compounds.

substance	chemical formula	relative formula mass/M_r	Mass of 1 mole/g
ammonia	NH_3		
water	H_2O		
methane	CH_4		
carbon dioxide	CO_2		
sulphur dioxide	SO_2		
sodium chloride	$NaCl$		
calcium bromide	$CaBr_2$		
Lead oxide	PbO		
Sodium nitrate	$NaNO_3$		
Calcium phosphate	$Ca_3(PO_4)_2$		
Aluminium carbonate	$Al_2(CO_3)_3$		

Answers

1 The relative atomic mass of an atom (A_r) is the mass of an atom compared to the mass of ^{12}C, use the periodic table to complete the table below.

Element/symbol	A_r	Element/symbol	A_r
hydrogen	1	lead	207
helium	4	iodine	127
carbon	12	copper	63.5
nitrogen	14	potassium	39
oxygen	16	calcium	40
aluminium	27	phosphorus	31

2 What is a molecule? A small group of atoms

3 Calculate the relative formula mass (M_r) then the mass of 1 mole for the following compounds.

substance	chemical formula	relative formula mass/M_r	Mass of 1 mole/g
ammonia	NH_3	14+3=17	17g
water	H_2O	16+2=18	18g

methane	CH_4	12+4=16	16g
carbon monoxide	CO	12+16=28	28g
sulphur dioxide	SO_2	32+32=64	64g
sodium chloride	$NaCl$	23+35.5= 58.5	58.5g
calcium bromide	$CaBr_2$	40+160= 200	200g
Sodium nitrate	$NaNO_3$	23+ 14+ 48=85	85g
Calcium phosphate	$Ca_3(PO_4)_2$	120+ 36+144= 300	300g
Aluminium carbonate	$Al_2(CO_3)_3$	54+ 36+144= 234	234g