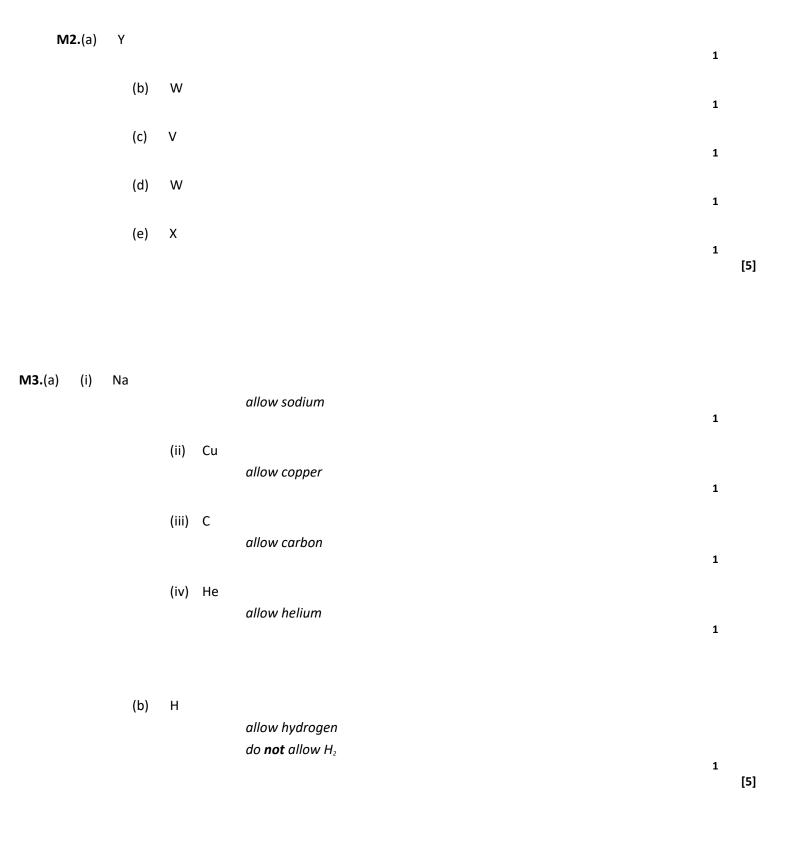
M1.(a) 1 (b) D 1 (c) Ε 1 (d) C 1 (e) 92.5×6 and 7× 7.5 1 607.5 100 1 6.075 1

allow 6.08 with no working shown for **4** marks

[8]

1

6.08



l 4. (a)	(i)	atomic v	weight	1
			(ii) groups	1
			(iii) left a gap	1
			(iv) had not been discovered by 1869	1
		(b)	protons must be in correct order	1
			electrons	1
		(c)	sodium and nickel are both metals	1
			sodium is more reactive than nickel	1
		(d)	(i) bromine allow Br ₂ / Br do not allow bromide	1
			(ii) iodine is less reactive (than bromine) it = iodine allow converse do not allow bromide	

[10]

M5. (a)	(i)		E	1
		(ii)	C	1
		(iii)	A	1
(b	o)	(i)	quickly melted allow melts in contact with water, allow bp 100 °C (of water) shows mp is low ignore one other piece of information	1
		(ii)	easily cut ignore one other piece of information	1
		(iii)	effervescence / fizzing / bubbling ignore named gas ignore one other piece of information	1

[6]

M6. (a)	1 / one		1
	(b)	(i) protons	1
		(ii) neutrons	1
		(iii) 7	1
	(c)	(i) losing	1
		(ii) a positive	1
		(iii) electrostatic	1
	(d)	high melting points	1
		strong bonds	1
	(e)	(i) 58.5	

1

(ii) mole

1

(f) very small (particles) or

ignore tiny / small / smaller / microscopic etc.

1-100nm in size **or**

(particle with a) few hundred atoms

[12]

1

M7. (a)	number		1
		0 allow 8	1
	(b)	beryllium or magnesium or strontium or barium or radium allow correct symbols	1
	(c)	(i) an alkali metal	1
		(ii) a transition metal	1
	(d)	for undiscovered elements accept so elements with similar properties were in the same groups accept so elements fitted the pattern of properties	1

[6]

M8.		(a)	groups		1
	(b)	it is	s a non-m	netal allow it is not a metal	1
	(c)	to 1	the right o	of column 7 / Group 7 accept in Group 0 ignore Group 8 / noble gases	1
	(d)	(at	omic) nur	mber allow proton number	1

[4]

M9.	((a) sodium has a lower density	1	
		sodium is more reactive	1	
	(b)	hydrogen	1	
	(c)	OH-(aq)	1	[4]