Chapter 2
Atoms: Are They for Real?

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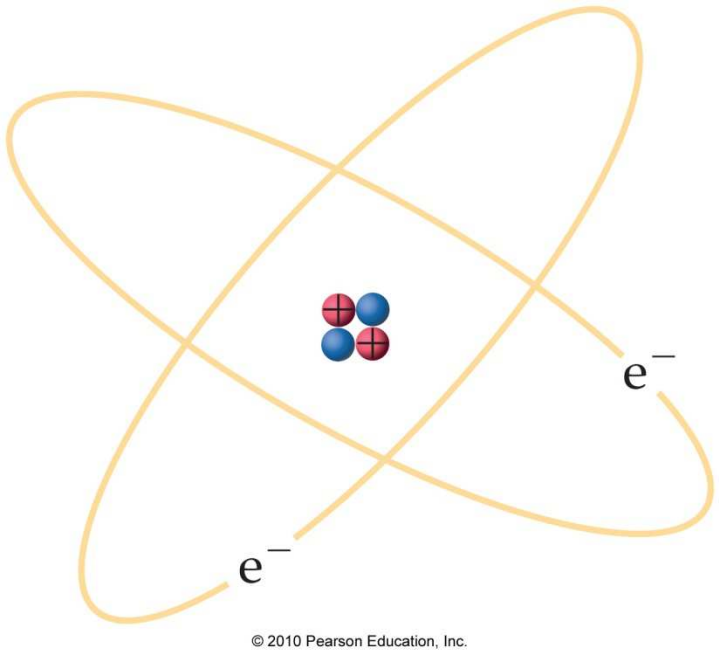

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b. Cannot be seen
c. Cannot be cut
d. Basis
e. Reactive

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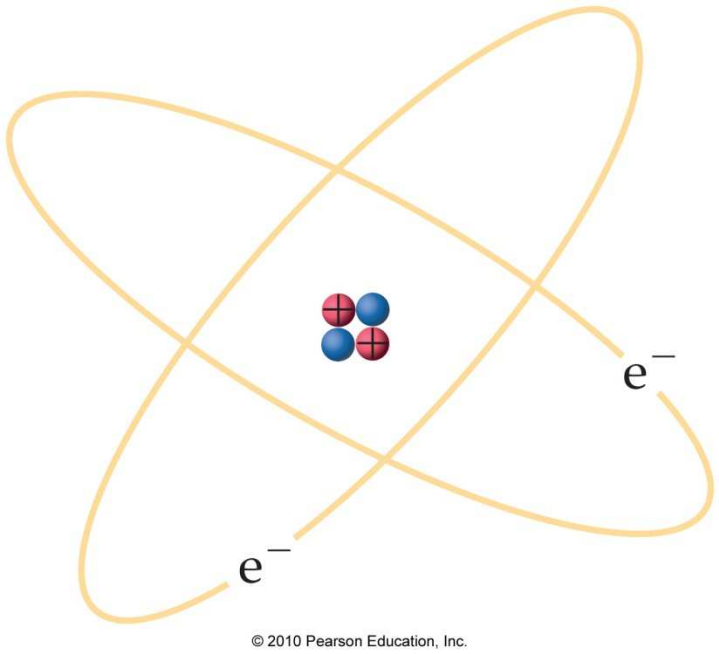

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The fact that 4 g of hydrogen (H_2) reacts with 32 g of oxygen (O_2) to give 36 g of water is an illustration of what law?

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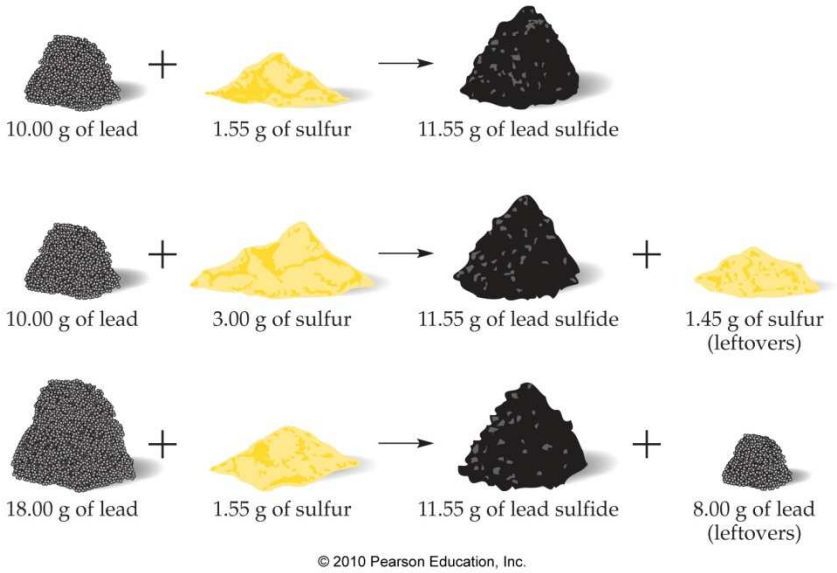

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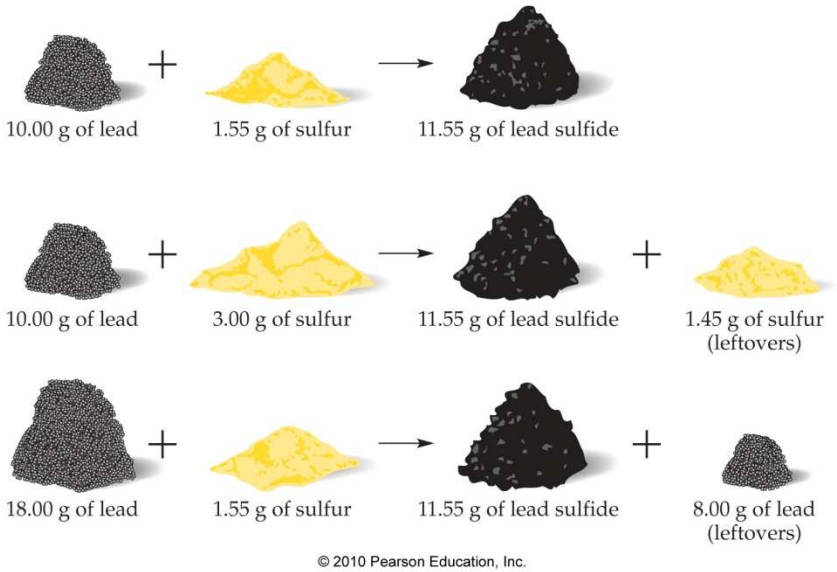

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Carbon and oxygen can react to form carbon monoxide (CO) or carbon dioxide (CO_2) depending on the amount of oxygen available. This illustrates which law?

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Mendeleev arranged the elements in his early *periodic table* primarily according to what criterion?

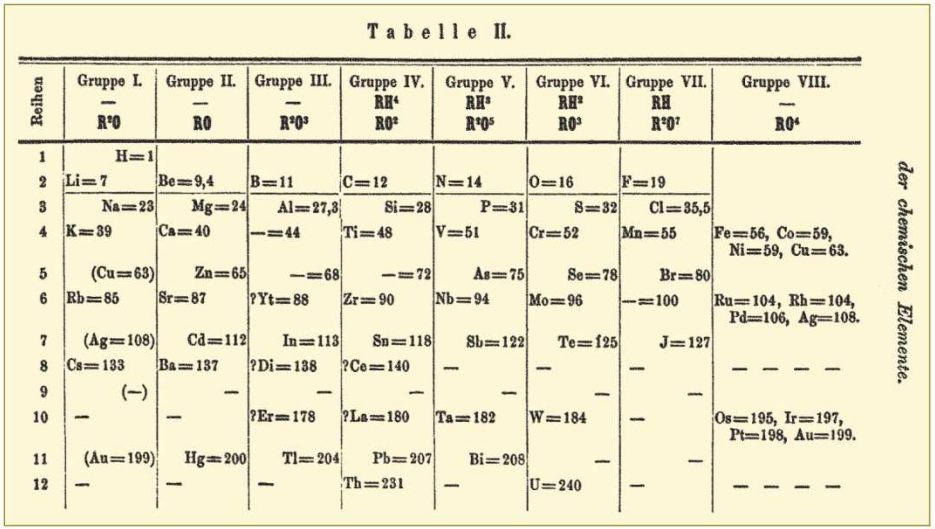

Tabelle II.

Reihen	Gruppe I. — R^2O	Gruppe II. — RO	Gruppe III. — R^2O^3	Gruppe IV. RH^4 RO^2	Gruppe V. RH^3 R^2O^5	Gruppe VI. RH^2 RO^3	Gruppe VII. RH R^2O^7	Gruppe VIII. — RO^4
1	H=1							
2	Li=7	Be=9,4	B=11	C=12	N=14	O=16	F=19	
3	Na=23	Mg=24	Al=27,3	Si=28	P=31	S=32	Cl=35,5	
4	K=39	Ca=40	—=44	Ti=48	V=51	Cr=52	Mn=55	Fe=56, Co=59, Ni=59, Cu=63.
5	(Cu=63)	Zn=65	—=68	—=72	As=75	Se=78	Br=80	
6	Rb=85	Sr=87	?Yt=88	Zr=90	Nb=94	Mo=96	—=100	Ru=104, Rh=104, Pd=106, Ag=108.
7	(Ag=108)	Cd=112	In=113	Sn=118	Sb=122	Te=125	J=127	
8	Cs=133	Ba=137	?Di=138	?Ce=140	—	—	—	— — — —
9	(—)	—	—	—	—	—	—	
10	—	—	?Er=178	?La=180	Ta=182	W=184	—	Os=195, Ir=197, Pt=198, Au=199.
11	(Au=199)	Hg=200	Tl=204	Pb=207	Bi=208	—	—	
12	—	—	—	Th=231	—	U=240	—	— — — —

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a. Similar physical properties
b. Similar chemical properties
c. Decreasing atomic masses
d. Similar appearance
e. Natural abundance

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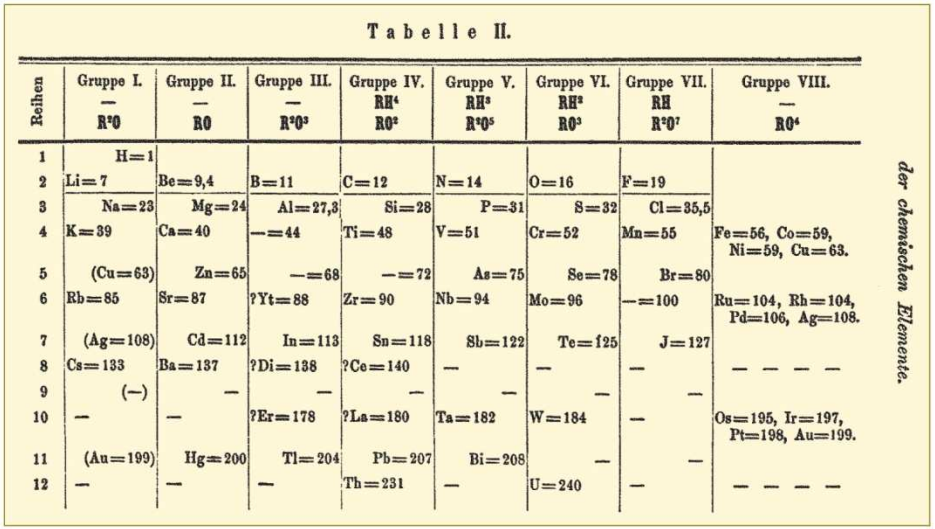

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magnesium	+	oxygen	→	magnesium oxide
24.0 g of magnesium		16.0 g of oxygen		40.0 g of magnesium oxide

When 6.0 g of magnesium reacts with 12.0 g of oxygen, how much magnesium oxide will be formed?

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