

12/14/15

Electron Config Review

- 1 $3.0 \times 10^8 \frac{m}{s}$
- 2 speed / frequency
- 3 Planck
- 4 Photons
- 5 Compton
- 6 particle
- 7 spectrum
- 8 speed / momentum
- 9 energy level (n)
- 10 excited state

- 11 c
- 12 B
- 13 A
- 14 A
- 15 B
- 16 B
- 17 c
- 18 C
- 19 c
20. B
- Ca

$$\lambda = \frac{c}{\nu}$$

S = sphere

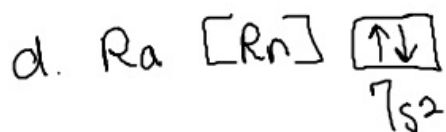
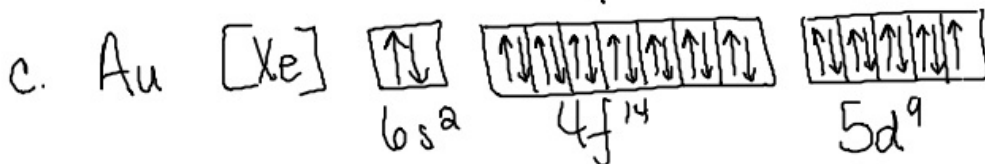
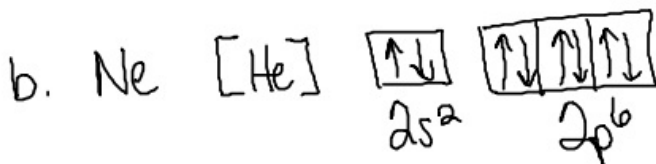
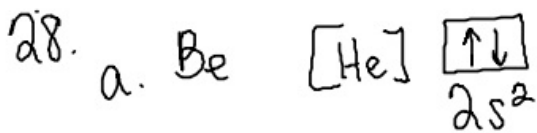
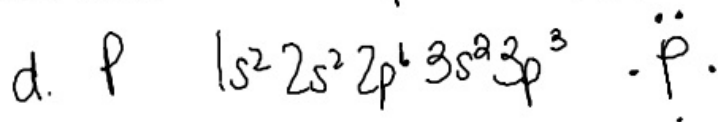
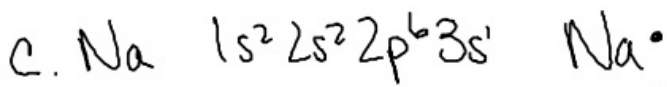
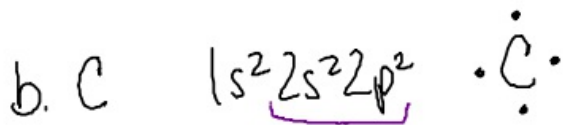
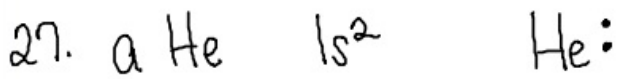
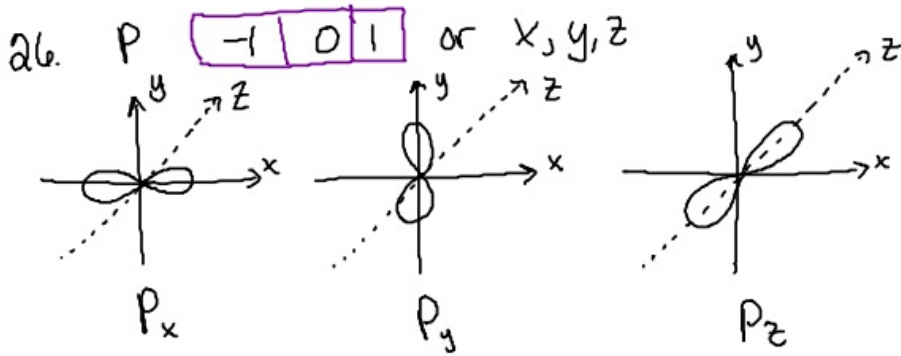
P = ∞ infinity sign (dumbbell)

	l	# orbitals	# e^-
21.	s	1	2
22.	p	3	6
23.	d	5	10
24.	f	7	14

n energy level	l sublevel azimuthal	m magnetic	# of orbitals	# of e^-
1	s	0	1	2
2	s, p	s 0 p -1 0 1	4	8
3	s, p, d	s 0 p -1 0 1 d -2 -1 0 1 2	9	18
4 (5, 6, 7)	s, p, d, f	s 0 p -1 0 1 d -2 -1 0 1 2 f -3 -2 -1 0 1 2 3	16	32

25. Quantum #

- 1 - n = energy level (1-7)
- 2 - l = sublevel (s, p, d, f)
- 3 - m = magnetic = direction in space
- 4 - s = spin = $+\frac{1}{2}$ $-\frac{1}{2}$ or $\uparrow\downarrow$



wavelength λ meters (m) or nanometers (nm)

if given nm you must convert to m

$$568 \text{ nm} \times \frac{1 \text{ m}}{1 \times 10^9 \text{ nm}} = 5.68 \times 10^{-7} \text{ m} \quad \lambda$$

$$a) \quad \nu = \frac{c}{\lambda} = \frac{3.0 \times 10^8 \frac{\text{m}}{\text{s}}}{5.68 \times 10^{-7} \text{ m}} = 5.28 \times 10^{14} \frac{1}{\text{s}}$$

$$b) \quad \lambda = \frac{3.0 \times 10^8 \frac{\text{m}}{\text{s}}}{6.23 \times 10^5 \frac{1}{\text{s}}} = 4.82 \times 10^2 \text{ m}$$

$$c) \quad \nu = \frac{3.0 \times 10^8 \frac{\text{m}}{\text{s}}}{6.22 \times 10^{-7} \text{ m}} = 4.82 \times 10^{14} \frac{1}{\text{s}}$$

? λ wavelength

? ν frequency

? c speed of light

$$d) \quad \lambda = \frac{3.0 \times 10^8 \frac{\text{m}}{\text{s}}}{72.1 \frac{1}{\text{s}}} = 4.16 \times 10^6 \text{ m}$$

$$\lambda = \frac{c}{\nu} \quad \frac{\nu \lambda}{\lambda} = \frac{c}{\nu} \frac{\nu}{\lambda} \rightarrow \nu = \frac{c}{\lambda}$$

λ = wavelength (nm or m)

ν = frequency (cycle per second) $\frac{1}{\text{s}}$ s^{-1} Hz

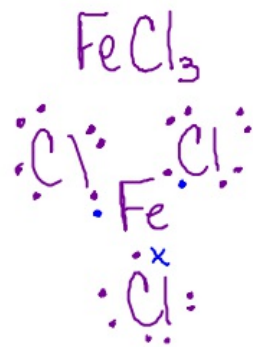
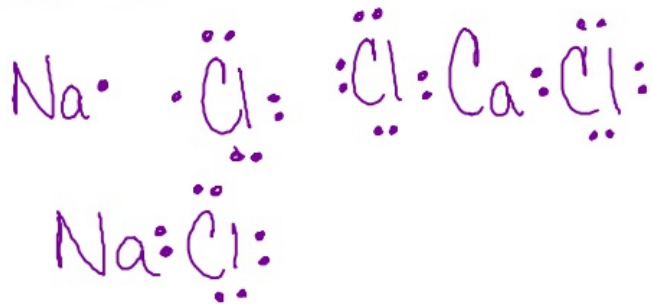
c = speed of light = $3.0 \times 10^8 \frac{\text{m}}{\text{s}}$

$$\lambda = \frac{c}{\nu}$$

Lewis Dot Diagram:

IA	IIA	Grp B	IIIA	IIIA	IVA	VIA	VIA	VIIA	VIIIA
X•	•X•	*X•	•X•	•X•	•X•	•X•	•X•	•X•	•X•
never center	linear	when reacting they imitate other atoms	trigonal planar (flat triangle)	(4 equal bonds) tetrahedral (4 sides)	107° pyramidal	105° BENT	never center	NO Bonds	

Na Cl



FeI₂

H₂O

MgF₂

H₃N