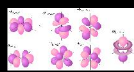
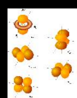
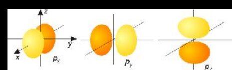
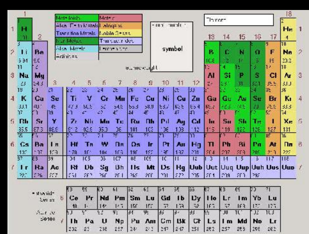
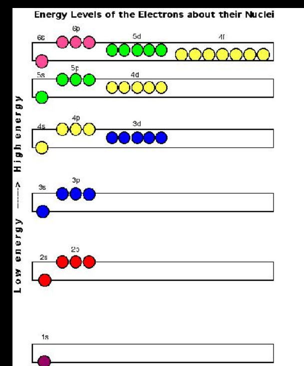








Electron Configuration Problems



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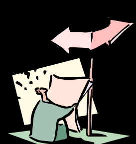
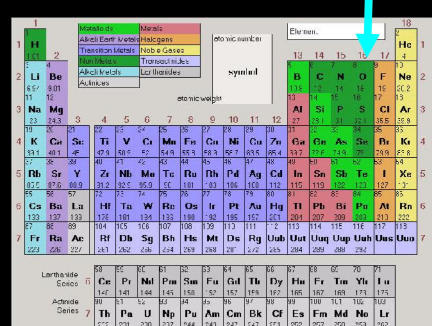
Walking Through The Periodic Table

Electron Configuration = a walk through the table

What element has the electron configuration $1s^2 2s^2 2p^4$? O
What period is it in? 2
What group is it in? 6
How many valence electrons? 6

Without "Table"
Coefficient = period
" A" Group = s + p





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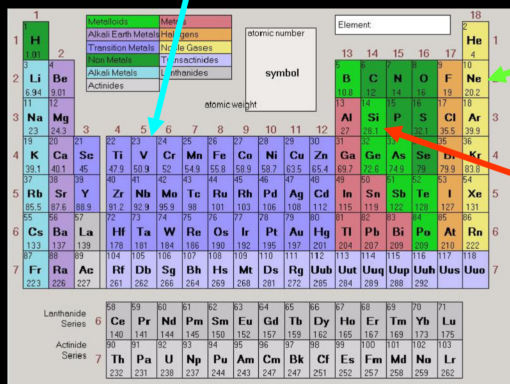
Identify the elements with electron configurations

$1s^22s^22p^63s^23p^64s^23d^3$

V

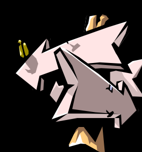


$1s^22s^22p^6$

Ne

$1s^22s^22p^63s^23p^2$

Si



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Write the ground state electron configuration of:

Cobalt

$1s^2\,2s^2\,2p^6\,3s^23p^64s^2\,3d^7$

Manganese

$1s^2\,2s^2\,2p^6\,3s^23p^64s^2\,3d^5$

Nickel

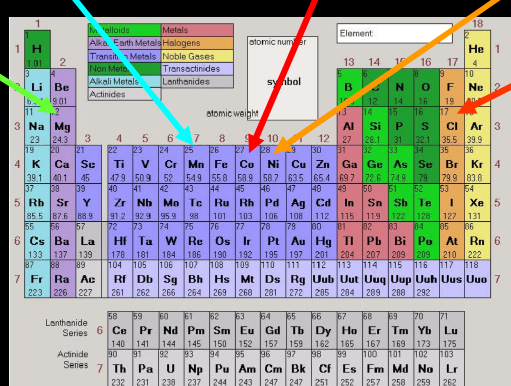
$1s^2\,2s^2\,2p^6\,3s^23p^64s^2\,3d^8$

Magnesium

$1s^2\,2s^2\,2p^6\,3s^2$

Chlorine

$1s^2\,2s^2\,2p^6\,3s^2\,3p^5$



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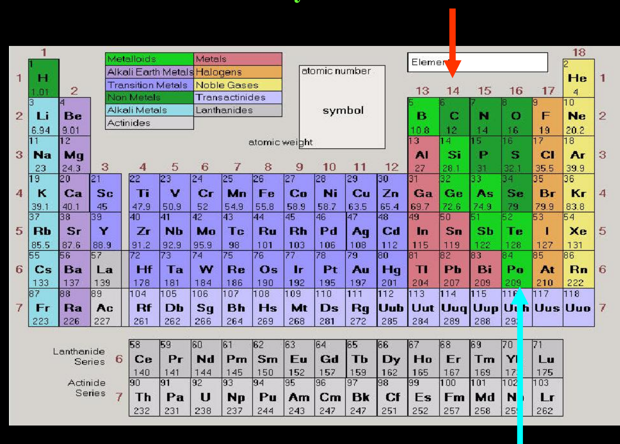
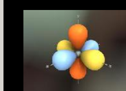
What is the # of valence electrons in atoms of carbon & silicon?

Carbon and Silicon members of family 4A ➔ 4 electrons





Which group of the Periodic Table does ns^2np^4 represent?

Valence shell is s + p: 2 + 4 = 6 ➔ VI A (16)

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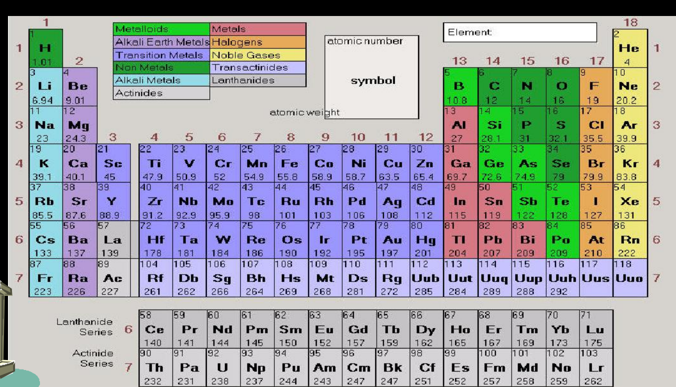
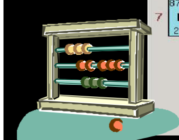
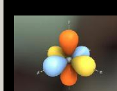
Comparing Entities: Looking for IsoElectronic Atoms







Loses Electrons (Becomes More Positive): Move to Left

Gains Electrons (Becomes More Negative): Move to Right

Number on Charge Determines How Many Spaces to Move

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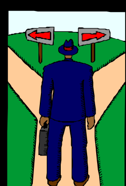
Which Atoms Are Isoelectronic?

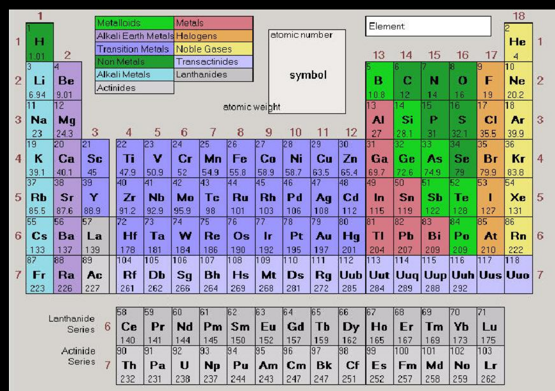
N^{3-} [Ne] & F^{-} [Ne] Yes, both have same configuration (Ne)

K^{+} [Ar] & Br^{-} [Kr] No, different outer shells

C^{4-} [Ne] & O^{2-} [Ne] Yes, both have same configuration (Ne)

Mg^{2+} [Ne] & Ca^{2+} [Ar] No, different outer shells





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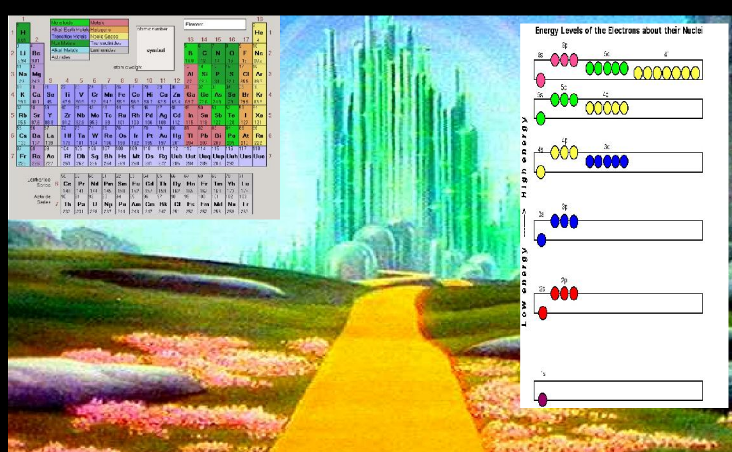
Path To Success



Start at Hydrogen
Walk Through Tables –one electron at a time
until
Element or Configuration is reached

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