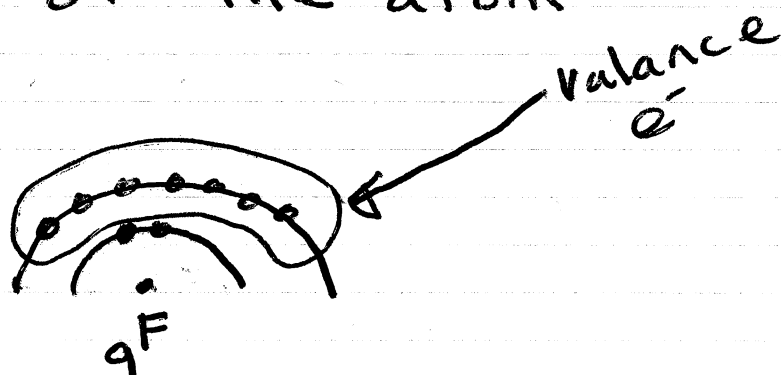


Day 5 Aug 9, 2017

Valance  $e^-$   $\equiv$  electrons that are furthest from the center of the atom



Why are they important?

They are involved in chemical reactions

| Intro to lewis dot diagrams |                  |                 |                 |                 |                 |                 |                  | $^2\text{He}$ |
|-----------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|---------------|
| 1                           | 2                | 3               | 4               | 5               | 6               | 7               | 8                |               |
| $\cdot\text{H}$             |                  |                 |                 |                 |                 |                 |                  |               |
| $\cdot\text{Li}$            | $\cdot\text{Be}$ | $\cdot\text{B}$ | $\cdot\text{C}$ | $\cdot\text{N}$ | $\cdot\text{O}$ | $\cdot\text{F}$ | $\cdot\text{Ne}$ |               |
| $\cdot\text{Na}$            | $\cdot\text{Mg}$ | $\downarrow$    | $\downarrow$    | $\downarrow$    | $\downarrow$    | $\downarrow$    |                  |               |
| $\cdot\text{K}$             | $\cdot\text{Ca}$ | SKIP the center |                 |                 |                 |                 |                  |               |
| $\downarrow$                | $\downarrow$     |                 |                 |                 |                 |                 |                  |               |

Day 5 Aug 9, 2017

Sci Not

$$3.2 \times 10^5 \quad \longrightarrow \quad \underbrace{3.20000}_{} \\ \boxed{320000}$$

$$\underbrace{32}_{} \times 10^5 \quad \longrightarrow \quad \boxed{3.2 \times 10^6}$$

$$3.2 \times 10^{-5} \quad \longrightarrow \quad \underbrace{0.000003.2}_{} \\ \boxed{0.0000032}$$

$$\underbrace{0.00000087}_{} \quad \longrightarrow \quad \boxed{8.7 \times 10^{-6}}$$

$$87000 \quad \longrightarrow \quad \boxed{8.7 \times 10^4}$$

8/10/17 Day 6

|                       |                    |
|-----------------------|--------------------|
| $0.0000556$           | $5560000$          |
| $5.56 \times 10^{-5}$ | $5.56 \times 10^6$ |

|                    |                       |
|--------------------|-----------------------|
| $2.31 \times 10^8$ | $2.31 \times 10^{-8}$ |
| $2.31000000$       | $0.0000000231$        |
| $231000000$        | $0.0000000231$        |

x with sci not

$$(2.31 \times 10^8)(5.56 \times 10^6) = 1.28 \times 10^{15}$$

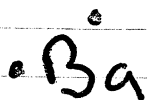
$\frac{1}{2}$  w/ sci.  
not

$$\frac{5.56 \times 10^{-5}}{2.31 \times 10^8} = 2.41 \times 10^{-13}$$

$2.41 \times 10^{-13}$  wrong

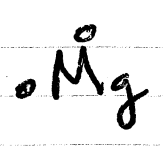
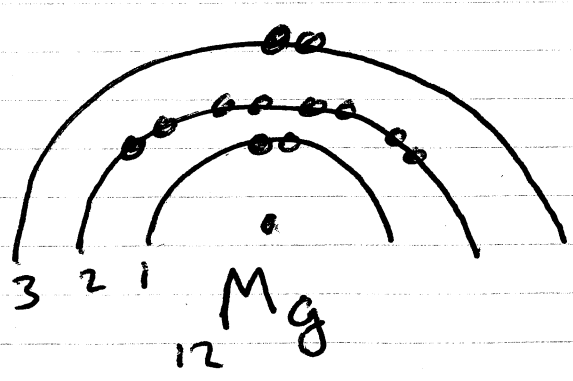
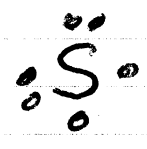
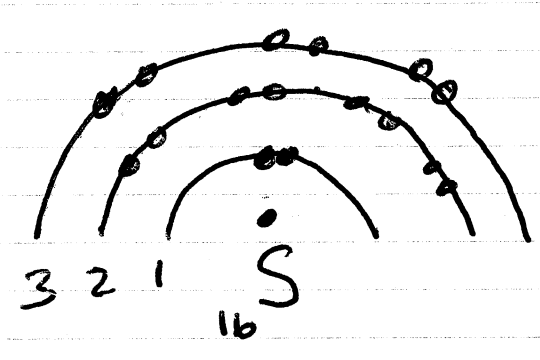
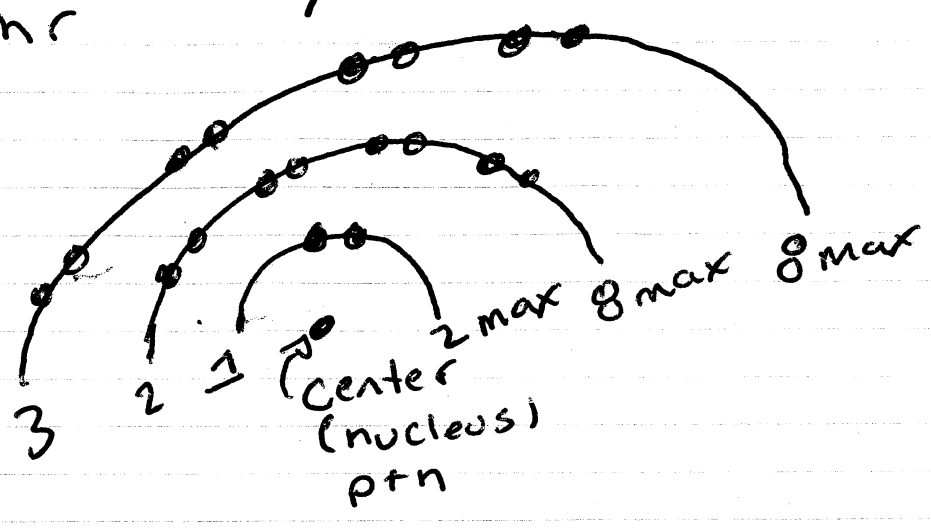
Lewis Dot Structures

Looking P-Table



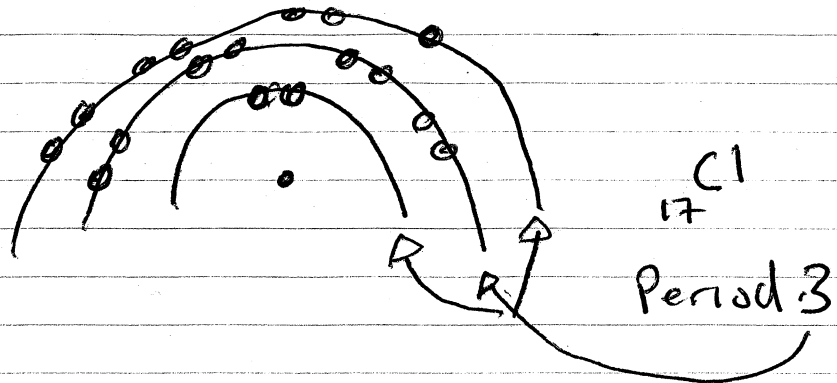
Valance  $e^-$

Bohr Day 6 cont.



8/11/17 Day 7

Review Bohr



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$$\frac{4.56 \times 10^{19}}{7.89 \times 10^{-21}} = 5.78 \times 10^{38}$$

$5.78^{38}$  ← wrong

---

$$(1.23 \times 10^5) (\cancel{6.02} 6.02 \times 10^{23}) = \boxed{7.40 \times 10^{28}}$$

$7.40^{28}$

8/14/17

Day 8

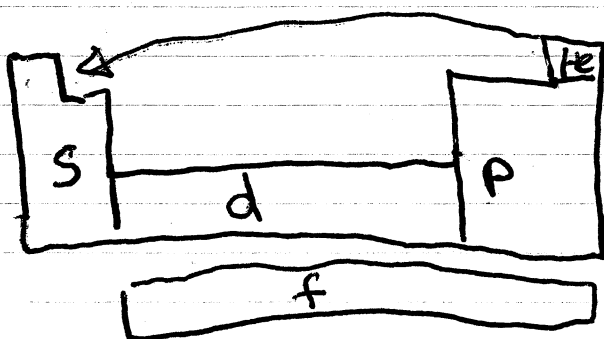
$$\frac{(6.02 \times 10^{23})(5.55 \times 10^5)}{-4.27 \times 10^{-11}} = \boxed{-7.82 \times 10^{39}}$$

$$\frac{20}{(10)(2)} = 1$$

Divided by, then  
Divided by again

$$\frac{4.27 \times 10^{-11}}{(6.02 \times 10^{23})(5.55 \times 10^5)} = \boxed{1.28 \times 10^{-40}}$$

1.28<sup>-40</sup>  
↑  
i wrong!



Orbitals

s, d, p, f

diff. shapes

# Day 8 Cont

"s" orbitals are shaped like a sphere



${}^1_1\text{H}$

one electron

shape of the orbit

1st energy level



s

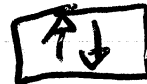
${}^2_2\text{He}$

$1s^2$

One sphere



nucleus



opp. spin.