

ATOM DIAGRAMMING

ATOM DIAGRAM: AN ILLUSTRATION OF WHAT THE INSIDE OF AN ATOM LOOKS LIKE.

(MEANING... HOW MANY OF EACH SUBATOMIC PARTICLE THERE IS & WHERE THEY ARE LOCATED)

SUBATOMIC PARTICLES

- 1.) PROTONS - NUCLEUS
- 2.) NEUTRONS - NUCLEUS
- 3.) ELECTRONS - ENERGY LEVELS
(SHELLS, RINGS, LAYERS)

STEPS TO DIAGRAMMING

- 1.) CHOOSE AN ELEMENT → IDENTIFY ATOMIC #
MASS

MERCURY → A.N. = 80
(Hg) M.N. = 201

- 2.) Determine the # of each subatomic particle:

$$p^+ = 80$$

$$n^0 = 121$$

$$e^- = 80$$

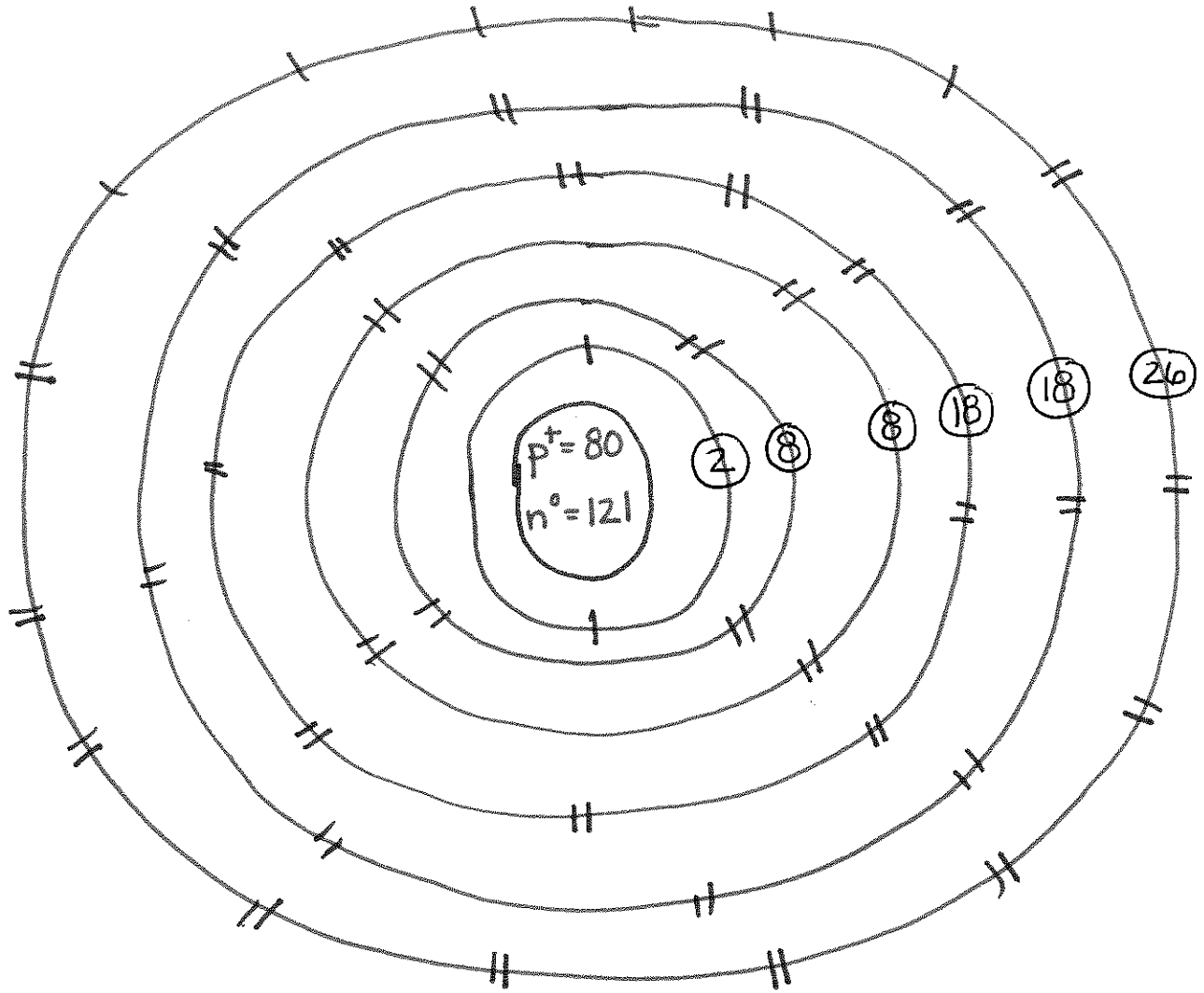
- 3.) DRAW THE NUCLEUS

$$\begin{array}{l} p^+ = 80 \\ n^0 = 121 \end{array}$$

4.) DRAW THE ENERGY LEVELS

(TO DETERMINE THE # OF ENERGY LEVELS NEEDED LOOK AT ~~THE~~ WHICH ROW OF THE PERIODIC TABLE THE ELEMENT IS FOUND IN → THAT'S THE ANSWER!)

Hg → 6th row → 6 energy layers



2
8
8
18
18
26

5.) ADD ELECTRONS

(ADD THEM INDIVIDUALLY AT FIRST UNTIL YOU REACH $\frac{1}{2}$ THE MAXIMUM CAPACITY OF THE LEVEL \rightarrow THEN BEGIN PAIRING THEM UP UNTIL YOU EITHER RUN OUT OR YOU FILL THE LAYER.)

* DETERMINE MAX CAPACITY:

However many elements are in the row IS the max. capacity of e^- 's the row can hold.

* In order to have/move to an outer layer... ALL interior layers must be full!

6.) DOUBLE CHECK YOU'VE INCLUDED THE RIGHT AMOUNT OF e^- 'S:

→ WRITE THE # OF e^- 'S ON EACH RING. ADD THEM UP & MAKE SURE THEY MATCH THE TOTAL.

Electron Layer Columns

→ A LIST THAT SHOWS HOW MANY e^- 'S ARE IN EACH LEVEL FOR THAT ELEMENT.

→ WHATEVER ROW THE ELEMENT IS IN WILL BE THE SAME AMT OF #'S IN LIST.

6. ROW = 6 #'S IN THE LIST.

EX:

Ta → 6 layers

Ta = 2, 8, 8, 18, 18, 19