**# of orbitals # of e-
in a “set” in the set**

**IONS**

 **1A 8A**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hydrogen**1****H**1.01 | **2A** |  | **Alkali metals Alkaline earth metals Transition metals Other metals****Metalloids (semi-metal)** | Element nameSymbol | Mercury**80****Hg** | Atomic # | **3A** | **4A** | **5A** | **6A** | **7A** | Helium**2****He**4.00 |
| Lithium | Beryllium |  | **Nonmetals****Halogens Noble gases** **3B 4B** | **5B** | **6B** | **7B** | **8B** | 200. **9B 10B** | Avg. Mass **11B 12B** | Boron | Carbon | Nitrogen | Oxygen | Fluorine | Neon |
| **3** | **4** |  | **5** | **6** | **7** | **8** | **9** | **10** |
| **Li** | **Be** |  | **B** | **C** | **N** | **O** | **F** | **Ne** |
| 6.94 | 9.01 |  | 10.81 | 12.01 | 14.01 | 16.00 | 19.00 | 20.18 |
| Sodium | Magnesium |  | Aluminum | Silicon | Phosphorus | Sulfur | Chlorine | Argon |
| **11** | **12** |  | **13** | **14** | **15** | **16** | **17** | **18** |
| **Na** | **Mg** |  | **Al** | **Si** | **P** | **S** | **Cl** | **Ar** |
| 22.99 | 24.31 |  | 26.98 | 28.09 | 30.97 | 32.07 | 35.45 | 39.95 |
| Potassium | Calcium |  | Scandium | Titanium | Vanadium | Chromium | Manganese | Iron | Cobalt | Nickel | Copper | Zinc | Gallium | Germanium | Arsenic | Selenium | Bromine | Krypton |
| **19****K**39.10 | **20****Ca**40.08 |  | **21****Sc**44.96 | **22****Ti**47.88 | **23****V**50.94 | **24****Cr**52.00 | **25****Mn**54.94 | **26****Fe**55.85 | **27****Co**58.93 | **28****Ni**58.69 | **29****Cu**63.55 | **30****Zn**65.39 | **31****Ga**69.72 | **32****Ge**72.61 | **33****As**74.92 | **34****Se**78.96 | **35****Br**79.90 | **36****Kr**83.80 |
| Rubidium | Strontium |  | Yttrium | Zirconium | Niobium | Molybdenum | Technetium | Ruthenium | Rhodium | Palladium | Silver | Cadmium | Indium | Tin | Antimony | Tellurium | Iodine | Xenon |
| **37** | **38** |  | **39** | **40** | **41** | **42** | **43** | **44** | **45** | **46** | **47** | **48** | **49** | **50** | **51** | **52** | **53** | **54** |
| **Rb** | **Sr** |  | **Y** | **Zr** | **Nb** | **Mo** | **Tc** | **Ru** | **Rh** | **Pd** | **Ag** | **Cd** | **In** | **Sn** | **Sb** | **Te** | **I** | **Xe** |
| 85.47 | 87.62 |  | 88.91 | 91.22 | 92.91 | 95.94 | (98) | 101.07 | 102.91 | 106.42 | 107.87 | 112.41 | 114.82 | 118.71 | 121.76 | 127.60 | 126.90 | 131.29 |
| Cesium | Barium |  | Lanthanum | Hafnium | Tantalum | Tungsten | Rhenium | Osmium | Iridium | Platinum | Gold | Mercury | Thallium | Lead | Bismuth | Polonium | Astatine | Radon |
| **55****Cs**132.91 | **56****Ba**137.33 |  | **57****La**138.91**\*** | **72****Hf**178.49 | **73****Ta**180.95 | **74****W**183.84 | **75****Re**186.21 | **76****Os**190.23 | **77****Ir**192.22 | **78****Pt**195.08 | **79****Au**196.97 | **80****Hg**200.59 | **81****Tl**204.38 | **82****Pb**207.20 | **83****Bi**208.98 | **84****Po**(209) | **85****At**(210) | **86****Rn**(222) |
| Francium | Radium |  | Actinium**89****Ac**(277)**\*\*** | Rutherfordium | Dubnium | Seaborgium | Bohrium | Hassium | Meitnerium | Darmstadtium | Roentgenium | Copernicium | Nihonium | Flerovium | Moscovium | Livermorium | Tennessine | Oganesson |
| **87****Fr**(223) | **88****Ra**(226) |  | **104****Rf**(267) | **105****Db**(268) | **106****Sg**(271) | **107****Bh**(272) | **108****Hs**(270) | **109****Mt**(276) | **110****Ds**(281) | **111****Rg**(280) | **112****Cn**(285) | **113** **Nh**(286) | **114** **Fl**(289) | **115** **Mc**(289) | **116** **Lv**(293) | **117** **Ts** (294) | **118** **Og**(294) |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **\*** | Cerium**58****Ce**140.12 | Praseodymium**59****Pr**140.91 | Neodymium**60****Nd**144.24 | Promethium**61****Pm**(145) | Samarium**62****Sm**150.36 | Europium**63****Eu**151.97 | Gadolinium**64****Gd**157.25 | Terbium**65****Tb**158.93 | Dysprosium**66****Dy**162.50 | Holmium**67****Ho**164.93 | Erbium**68****Er**167.26 | Thulium**69****Tm**168.93 | Ytterbium**70****Yb**173.04 | Lutetium**71****Lu**174.97 |
| **\*\*** | Thorium**90****Th**232.04 | Protactinium**91****Pa**231.04 | Uranium**92****U**238.03 | Neptunium**93****Np**(237) | Plutonium**94****Pu**(244) | Americium**95****Am**(243) | Curium**96****Cm**(247) | Berkelium**97****Bk**(247) | Californium**98****Cf**(251) | Einsteinium**99****Es**(252) | Fermium**100****Fm**(257) | Mendelevium**101****Md**(258) | Nobelium**102****No**(259) | Lawrencium**103****Lr**(262) |

\*lanthanides

**Go back to d-block!**

\*\*actinides

Trick for writing electron configurations so you don’t have to use an orbital diagram!

*Glue this half down into your notebook
AFTER we finish labeling it!*



N-12