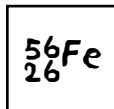


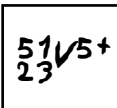
WS 2.8 Review Sheet, **solutions**

- $^{31}_{15}\text{P}$ P= 15 n= 16 e= 15
- $^{39}_{20}\text{Ca}^{2+}$ P= 20 n= 19 e= 18
- $^{128}_{52}\text{Te}^{4-}$ P= 52 n= 76 e= 56

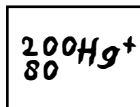
4. p= 26 n= 30 e= 26



5. p= 23 n= 28 e= 18



6. p= 80 n= 120 e= 79



7. boron: $1s^2 2s^2 2p^1$

8. magnesium: $1s^2 2s^2 2p^6 3s^2$

9. technetium: $[\text{Kr}]^{36} 5s^2 4d^5$

10. selenium: $[\text{Ar}]^{18} 4s^2 3d^{10} 4p^4$

11. francium: $[\text{Rn}]^{86} 7s^1$

12. tungsten: $[\text{Xe}]^{54} 6s^2 5d^4 4f^{14}$

13. How many joules of energy are contained in a photon of green light?
(frequency is 2.05×10^{14} Hz?)

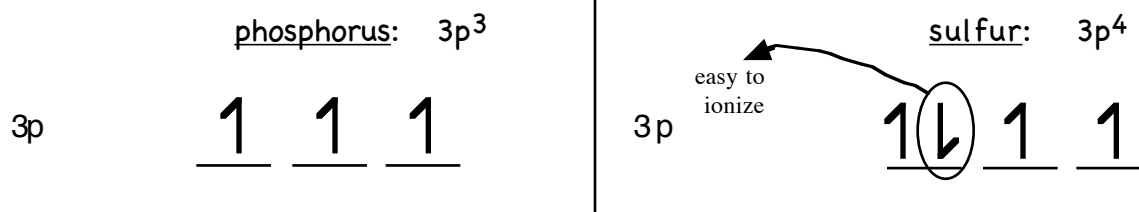
$$E = h \cdot \nu \quad (6.63 \times 10^{-34} \text{ J}\cdot\text{sec})(2.05 \times 10^{14} \text{ sec}^{-1}) = 1.36 \times 10^{-19} \text{ J}$$

14. For the 4p sublevel, n= 4, and $l=$ 1.

15. What are the diatomic gases of the periodic table? $\text{N}_2, \text{O}_2, \text{F}_2, \text{H}_2, \text{Cl}_2, \text{Br}_2, \text{I}_2$

16. What is your all time favorite noble gas? He, Ne, Ar, Kr, Xe, or Rn (your choice!)

17. Which has a higher ionization energy, phosphorus or sulfur? Back-up your answer with an electron orbital diagram for each:



Phosphorus has a higher ionization NRG...

Ionization NRG increases as you go across a period except where electrons first start to pair-up.