Atomic Structure Practice Key

1. Give the number of protons, electrons, and neutrons in each of the following atoms.
   a. 47 p, 47 e, 61 n
   b. 20 p, 20 e, 20 n
   c. 11 p, 11 e, 12 n

2. Name each isotope and write it in isotopic notation:
   a. Atomic # 26; mass number 56 $^{56}_{26}Fe$
   b. Atomic # 29; mass number 64 $^{64}_{29}Cu$
   c. Atomic #17; mass number 37 $^{37}_{17}Cl$

3. How many protons, electrons, and neutrons are in each of the following isotopes?
   a. Uranium-235 92 p, 92 e, 143 n
   b. Hydrogen-3 1 p, 1 e, 2 n
   c. Silicon-29 14 p, 14 e, 15 n

4. How many neutrons does europium-151 have? 88
   a. What is this isotope's mass number? 151

5. How many more neutrons does thorium-230 have than protons? 140 n – 90 e = 50
   a. How many electrons does thorium-230 have? 90

6. Give the mass number of each isotope.
   a. Be with 5 neutrons 9
   b. Ga with 39 neutrons 70
   c. Si with 16 neutrons 30
   d. Ti with 26 neutrons 48

7. Give the atomic number of each isotope.
   a. Magnesium-25 12
   b. Bromine-79 35
   c. Antimony-121 51

8. Neon has two isotopes: Neon-20 and Neon -22
   a. Which isotope has the greater mass? Ne-22
   b. Which has more neutrons? Ne-22
   c. Which has more protons? neither
   d. Which has more electrons? neither

9. Complete the following chart.

Element	Atomic #	# protons	# neutrons	# electrons
Li	3	3	4	3
Fr	87	87	136	87
Np	93	93	144	93
Hg	80	80	121	80
Tl	81	81	123	81
Re	75	75	111	75
B	5	5	6	5