Writing Nuclear Reactions!

- 1) Describe what happens to a nucleus during radioactive decay.
- 2) Fill in the following chart for the three types of decay:

Characteristics of Alpha, Beta, and Gamma Radiation					
Property	Alpha	Beta	Gamma		
What is it?					
Symbol					
Charge					
What stops it?					

- 3) Which type of radiation is a packet of energy (photon) and not a particle?
- 4) What type of radiation is a helium nucleus?
- 5) Which type of radiation is a super fast moving electron?
- 6) Which type of decay results in an increase in the atomic number for the decay product?
- 7) Which type of decay results in a decrease in the atomic number for the decay product?
- 8) Which type of decay results in no change for the decay product?

Complete the	e follov	ving equations	and fill in the blanks.	Type of Decay
²³⁵ ₉₂ U	\rightarrow	²³¹ ₉₀ Th	+	
¹⁴ ₆ C	\rightarrow	14 7 N	+	
²²⁷ ₈₉ A C	\rightarrow	²²³ ₈₇ Fr	+	
²¹⁴ 83 Bi	\rightarrow	²He	+	
²¹² ₈₃ Bi	\rightarrow	0 -1 e	+	

Complete these nuclear reactions:

1.
$$^{238}_{92}U \rightarrow ^{234}_{90}Th +$$

(_____ decay)

2.
$$^{234}_{90}$$
Th $\rightarrow ^{234}_{91}$ Pa +

(_____ decay)

3.
$$^{234}_{91}$$
Pa \rightarrow + $^{4}_{2}$ He

(alpha decay)

4.
$$^{220}_{86}$$
Rn \rightarrow + $^{4}_{2}$ He

(alpha decay)

5.
$$^{216}_{84} Po \rightarrow$$
 + $^{0}_{-1} e$

(beta decay)

6.
$${}^{14}_{6}C \rightarrow {}^{14}_{7}N +$$

(_____ decay)

7.
$$^{210}_{83}$$
Bi \rightarrow +

(beta decay)