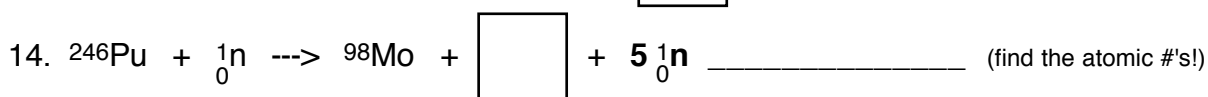
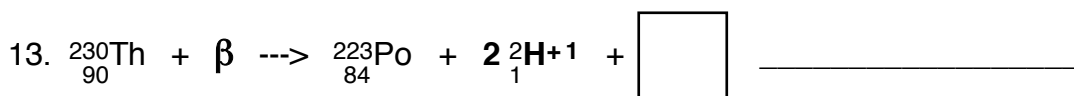
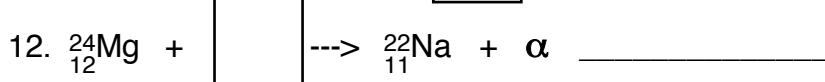
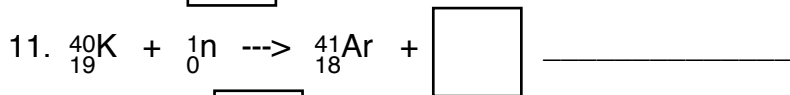
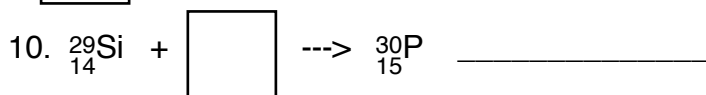
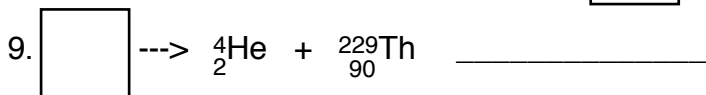
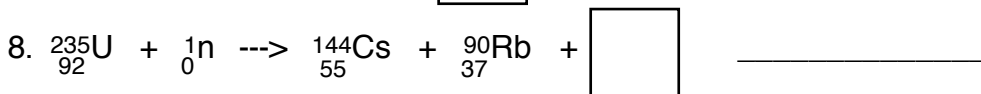
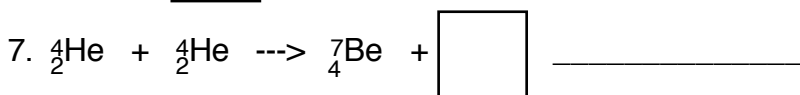
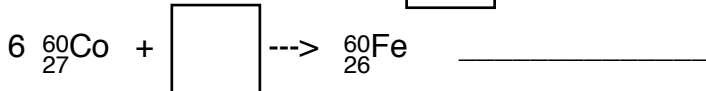
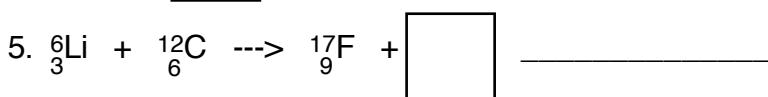
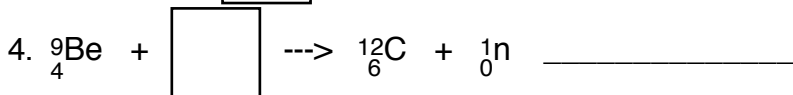
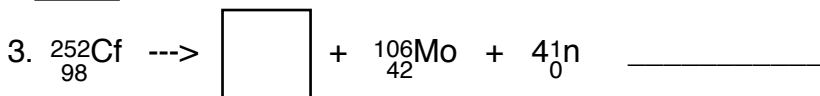
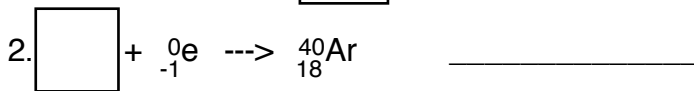
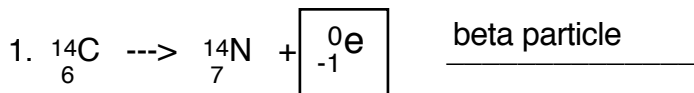


## WS 9.2 - Nuclear Reactions

Complete each of the following nuclear reactions by determining the missing particle, then **name that particle** ("alpha particle" or "uranium-233", etc...) #1 is an example...



15. What particle is produced when a Rn-224 atom undergoes beta decay? \_\_\_\_\_

16. What particle is produced when a Po-218 atom undergoes alpha decay? \_\_\_\_\_

17. What particle is produced when a U-234 atom undergoes a series of two alpha decays **and three** beta decays?

18. Pb-210 undergoes a series of alpha and beta decays to end up eventually as Ir-198. How many alpha particles and how many beta particles were emitted in all? Hint: do alpha's first, then beta's.  $\alpha =$  \_\_\_\_\_  $\beta =$  \_\_\_\_\_  
(show work)

symbol	name
${}^4_2\text{He} + 2$ or $\alpha$	alpha particle (a helium nucleus)
${}^0_{-1}\text{e}$ or $\beta$	beta particle (an electron)
${}^0_{+1}\text{e}$	positron (a positive electron?!)
${}_0^1\text{n}$	neutron
${}_1^1\text{p}$ or ${}_1^1\text{H} + 1$	proton (hydrogen-1 nucleus)
${}_1^2\text{H} + 1$	deuteron (hydrogen-2 nucleus)

**Ans(IRO) #1-17:** alpha particle beta particle barium-142 deuteron francium-224 lead-214 positron  
potassium-40 protactinium-226 proton 3-protons neutron neutron 2-neutrons tellurium-144 uranium-233