I have a few questions about #4 on the problem set - the question related to gene drives. One of the questions relates to 4(a), where we're asked to list the possible genotypes of the F3 animals. Should we list the genotypes of the progeny before or after the drive elements have acted (or both)?

**You should list the genotypes after the drive elements have acted, because the assumption is that they will act very early during development to produce a stable organismal genotype.  That will affect both germline and soma and will be propagated to the genotypes of their gametes.**

I also have a question about 4(c).  When we're asked what fraction of the F3 animals is capable of driving the payload to homozygosity in all F4 animalswould that simply be the combined frequency of F3 progeny that 1) have at least one copy of all 3 drive elements or 2) have at least one copy of both B and A?

**The question asks what fraction of F3 animals can drive the payload (i.e., A) to homozygosity in all F4 progeny.  It does not matter what the state of any other element is in the F4s.**