

- 1) How would you generate a conditional mutant allele of *roset/ess* that would allow you to test when the function of the protein is required. Using knowledge harnessed in BIO-411 (not necessarily just this week), provide two methods and explain how you would proceed in each case.

- 2) Walking on a beach in Brazil, you recover a male and a female of what looks like a new species of starfish, characterized by nine arms instead of the usual five. You name this species *Asterias nonabrachium* and decide to develop it as a new model system. Inspired by what you have seen in class, describe the sequence of steps you would take -some of which could take months or even years- to discover genes that are necessary for the unusual arm number in this new model system (mention at least four)?