Name_____

Biology 2202
GloFish laboratory homework
Due at beginning of class the week following the GloFish laboratory
10 pts

1. State one of the hypotheses you generated from your experiments in the Glofish laboratory. This hypothesis should focus on one of the inheritance patterns you saw (fictional example: "The jaguar allelle, which causes spots instead of stripes, is dominant over the normal allele, which causes striped fish." Be careful to choose a hypothesis you are interested in-you are going to use this hypothesis for a real cross. (3 pts)

Example answer: I hypothesize that the GloYFP and GloRFP transgenes are incompletely dominant.

2. Design a cross that will test your hypothesis (you can use any of the fish you observed during Laboratory 1. This should be a single pair mating-one female mated with one male. (3 pts).

Example answer 1:
genotype at GloYFP locus listed first, and genotype at GloRFP locus listed second

Yellow fish that had a yellow parent and a grey parent (so Glo^{YFP}/Glo^{-}; Glo-/Glo-)
X
Red fish that had a red parent and a grey parent (so Glo-/Glo-; Glo^{RFP}/Glo^{-})

Example answer 2:
Orange fish X Grey fish

3. Say your cross produces 100 embryos. Describe the expected outcome of your cross if your hypothesis is correct (2 pts). Describe one expected outcome if your hypothesis is incorrect (2 pts).
Example answer 1:
If hypothesis is correct, then 25% of the progeny will be orange
If hypothesis is incorrect, then there will not be any orange progeny

Example answer 2:
If hypothesis is correct, then there will be some progeny that are red and some progeny that are yellow (percentage will depend upon whether orange parent was heterozygous or homozygous for the transgenes)
If hypothesis is incorrect, then there will not be any red or yellow progeny from an orange parent.