**Outcome Practice: Sex-Linked Traits**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Biology 12**

1. Fathers do not pass “X”-linked traits onto their sons, why is this?
2. Why are there more colour-blind males than females?
3. Under what conditions is it possible for both a father and his son to have hemophilia?
4. In sponges, there exists a sex-linked recessive disorder that causes a sponge to have tiny pores (XP = normal and Xp = recessive, small pores). SpongeBob and his true love SpongSuzie are planning to have baby sponges. SpongeBob has the disorder and Susie is a carrier for the disorder.
   1. What is SpongeBob’s genotype? \_\_\_\_\_\_\_\_\_\_\_
   2. What is SpongeSuzie’s genotype? \_\_\_\_\_\_\_\_\_\_\_
   3. What percentage of their male offspring will have the disorder? \_\_\_\_\_\_\_\_\_\_
   4. What percentage of their male offspring will be normal? \_\_\_\_\_\_\_\_\_\_\_\_
   5. What percentage of their female offspring will have the disorder? \_\_\_\_\_\_\_\_\_\_\_
   6. What percentage of their female offspring will be normal, bur carriers? \_\_\_\_\_\_\_\_\_\_\_
   7. What percentage of their female offspring will be normal, non-carriers? \_\_\_\_\_\_\_\_\_\_\_\_
5. In fruit flies, the gene for white eyes is sex-linked recessive, (R) is red and (r) is white. What will the genotypes and phenotypes for the offspring of a heterozygous, red-eyed female and a red eyed male be?
6. In humans hemophilia is a sex-linked recessive trait. If a female who is a carrier for hemophilia has children with a male hemophilia, answer the following questions:
7. What fraction of the female children will have hemophilia?
8. What fraction of the children will be carriers?
9. What fraction of the male children will have normal blood clotting?
10. What fraction of the male children will be carriers?
11. What fraction of the male children will have hemophilia?
12. In turtles, the allele (B) produces a black colour shell but (b) produces a yellow coloured shell. These alleles are incompletely dominant to each other with a heterozygous organism produces a tortoise shell colour. The alleles (B) and (b) are sex-linked as well. Cross a female tortoise coloured shell with a male yellow shell, what are the offspring phenotypic ratios according to their genders?