Background Information: Pedigrees are used to trace a gene as it is passed down from generation to generation. The squares represent a male and the circles represent a female. In the examples on this handout, the shaded circles and squares will represent having the disorder. Make sure to read each question to find out if a disorder is caused by dominant alleles or recessive alleles. A person can be a carrier of a trait, meaning they have heterozygous alleles.

1) Hemophilia is a recessive sex-linked disorder located on the X chromosome where a person’s body cannot control blood clotting or coagulation. Write in the genotypes on the line next to / below each individual.

For all phenotype questions, on the first line write: male or female and the second line write: normal, carrier, hemophilia.

2) What is the phenotype of individual 2? ____________________  ____________________
3) What is the phenotype of individual 4? ____________________  ____________________
4) What is the phenotype of individual 5? ____________________  ____________________
5) What is the phenotype of individual 7? ____________________  ____________________
6) What is the phenotype of individual 9? ____________________  ____________________
7) What is the phenotype of individual 10? ____________________  ____________________
8) What is the phenotype of individual 11? ____________________  ____________________
9) What is the phenotype of individual 12? ____________________  ____________________
10) Fragile-X syndrome is a recessive sex-linked disorder located on the X chromosome. Below is a pedigree tracing the passing of the fragile-X syndrome gene through 3 generations. Write in the genotypes on the line next to / below each individual.

For all phenotype questions, on the first line write: male or female and the second line write: normal, carrier, fragile-X.

11) What is the phenotype of individual 1? ____________________  ___________________

12) What is the phenotype of individual 4? ____________________  ___________________

13) What is the phenotype of individual 6? ____________________  ___________________

14) Below is a recessive sex-linked pedigree tracing the red-green colorblindness gene located on the X chromosome. Write in the genotypes on the line next to / below each individual.