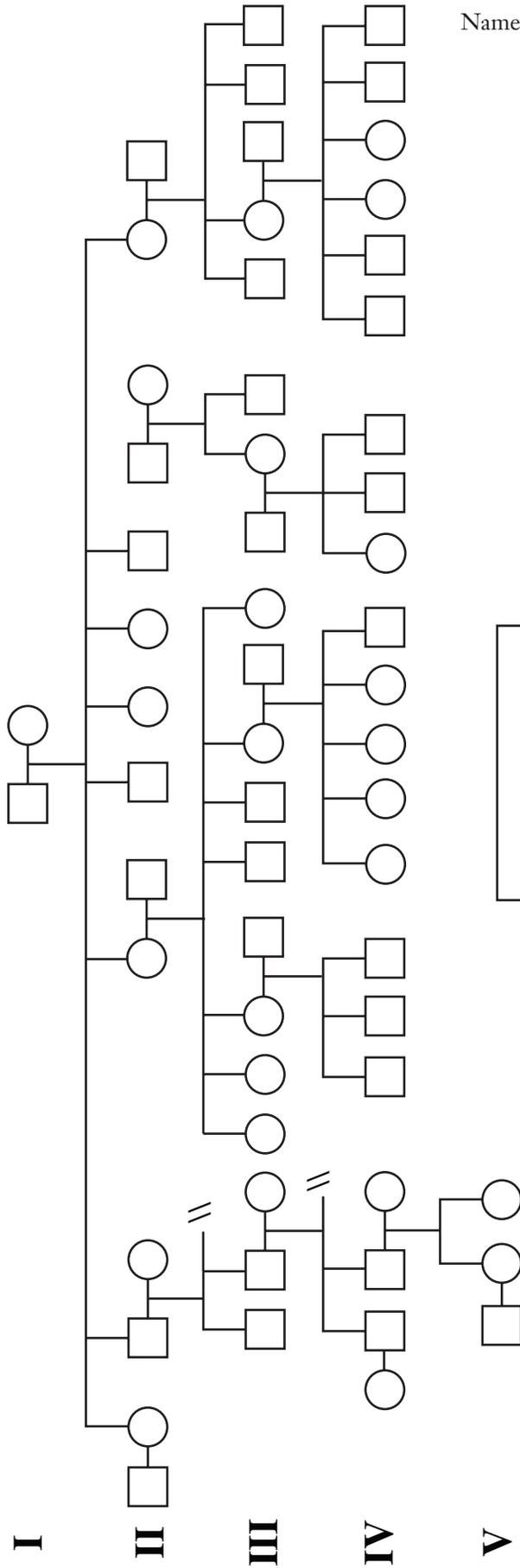
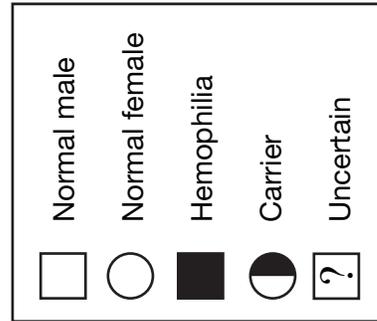


Queen Victoria's Pedigree Chart



Name _____



Tracking Traits with Pedigree Charts Worksheet

Discussion Questions

Use the completed Queen Victoria Pedigree Chart to answer Questions 1–5.

- In addition to Alice and Beatrice, Queen Victoria had three other daughters—Victoria (Vicky), Helena, and Louise. Complete the Punnett square below to indicate the possible genotypes of these daughters. What is the probability that any of the queen's daughters would be carriers of hemophilia?

	X^H	Y	
X^H			$H = \text{normal}$ $h = \text{hemophilia}$
X^h			

- The genotype of many of Queen Victoria's female offspring is unknown with respect to hemophilia. Why is this so?
- Vicky and her sister Helena (question 1) had eight and five children, respectively, with a total of seven male offspring. None of these grandchildren of Queen Victoria had any symptoms of hemophilia. How does this information help infer what Vicky's and Helena's genotypes might be?

- Queen Victoria's son Leopold married a woman with normal blood. Complete the Punnett square below to indicate the possible genotypes of their offspring. What is the probability of Leopold having a son with hemophilia?

	X^h	Y	
X^H			$H = \text{normal}$ $h = \text{hemophilia}$
X^H			

- England's reigning monarch is Queen Elizabeth II, a great-granddaughter of Queen Victoria's oldest son, Edward VII. Elizabeth's oldest son, Charles, is next in line for the throne. What is the possibility that Charles inherited hemophilia? Explain your answer.
- Choose a trait that some, but not all, members of your immediate family exhibit. Draw a pedigree chart on a separate sheet of paper showing at least two generations, your parents and yourself along with any siblings you may have. If information is available, you may include grandparents as well. Be sure to include a key indicating the trait represented.