1. The diagram below shows the DNA fingerprints of Mary, her child, and two men who are Mary’s ex-boyfriends. Which man is most likely the father of Mary’s child? Explain your answer.
2. What kind of molecule was used to digest the DNA samples from Mary, Bob, Larry and the child into fragments?
3. The DNA fragments for each sample in a gel create a unique pattern of bands called a “DNA fingerprint”. How is this different from an actual fingerprint? How is it similar?
4. The diagram below shows an agarose gel before it has undergone electrophoresis. The gel will be placed in a gel box that will provide an electrical current which will flow through the gel and allow the DNA to travel. Label the following on the diagram:
	1. The end of the gel that should be placed at the negative (--) electrode.
	2. The end of the gel that should be placed at the positive (+) electrode.
	3. Where the DNA samples should be loaded.

**A B C**

 1

 3

 4

1. The gel from Question 4 is run and the following bands appear.
	1. Which band should be the shortest? Why?

2

* 1. Which band should be the longest? Why?

5