

## GEL ELECTROPHORESIS OF DNA: POST-LAB ASSIGNMENT

Name:

Section:

(Attach problems 1 and 6 to the back of this report)

1. (1pt) Construct a standard curve using the sample gel on the last page of the electrophoresis lab. Remember to use the same rules for constructing this graph as you would have on previous assignments.

2. (2pts) Fill in the sizes of the DNA fragments in **kbp** in the table below using the standard curve you constructed for the previous problem.

fragment #	pX	$\lambda$ Eco RI
1		
2		
3		
4		
5		
6		

3. (1pt) Compare the accuracy of sizing very small or very large DNA fragments to DNA fragments that run approximately in the middle of the marker size range.

4. (1pt) Examine the target sequences of the restriction endonucleases in your lab book; look at the sequences of both strands of each restriction site reading from 5' to 3'. What structural anomaly is shared by all of them?

5. (1pt) Explain how the DNA in the gel separates.(How does electrophoresis work?)

6. (1pt) Construct a standard curve using the marker we loaded on the gel. Remember to use the same rules for constructing this graph as you would have on previous assignments.

7. (2pts) Fill in the sizes of the DNA fragments in **kbp** in the table below using the standard curve you constructed for the previous problem.

	Dog Numbers									
fragment	1	2	3	4	5	6	7	8	9	10
1										
2										
3										

8. (3pt) Which dogs have the mutation and which do not? Make sure you include an explanation of the genotypes of the mutant and non-mutant dogs.

9. (1pt) How many fragments would you expect to see in the affected pup's DNA?

10. (2pts) What would you expect (assuming hip dysplasia follows Mendelian genetics) would be the outcome of a cross between a heterozygous mutant dog and a homozygous non-mutant dog?