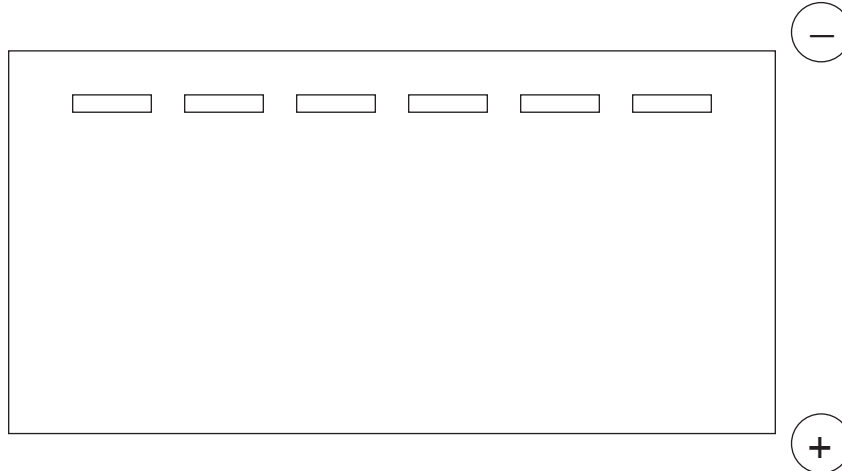


Roles of Restriction Enzymes Worksheet

Observations

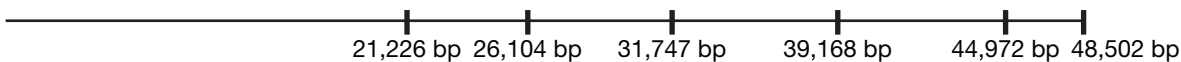
Sketch the DNA fragment patterns produced by both DNA restriction enzyme digests (EcoRI and HindIII).



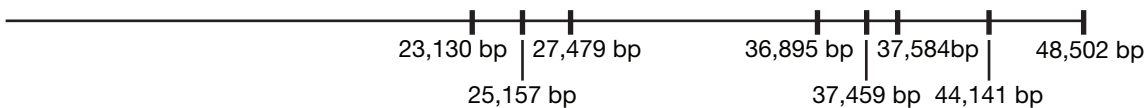
Post-Lab Questions

- Briefly summarize how gel electrophoresis is used to separate biological molecules.
- When analyzing the DNA banding pattern, where on the gel would you expect to find the largest fragments produced by the restriction enzyme?
- Compare and contrast the DNA fragment patterns obtained with EcoRI and HindIII?
- A DNA-restriction enzyme digest is analyzed by electrophoresis—it produces a large number of bands very close together. What does this indicate about the number of restriction sites in the original DNA sample?
- Below are the restriction maps of Lambda DNA cut with EcoRI and HindIII. The vertical lines represent restriction site locations. Lambda DNA is 48,502 base-pairs long. All numbers are expressed in units of base pairs

Location of EcoRI Restriction Sites



Location of HindIII Restriction Sites



- Based on the restriction site locations, determine the number and length of fragments that should be produced in each lambda DNA sample digest.
- Label each band in the sketch of your gel with the correct location and size. Tip: If not all bands are visible on the gel add them in the approximate location on the graph where they should have appeared.