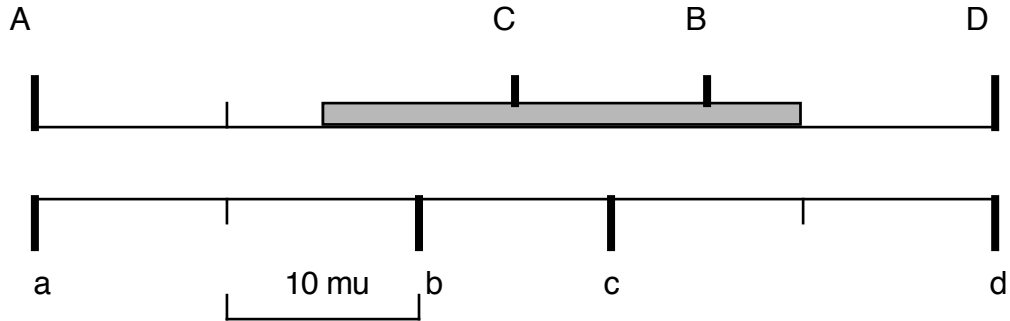


1. Below is a map of a region of two homologous chromosomes in a heterozygous individual who has an inversion shown by the box shaded in gray. If you test-crossed this individual **what genotypes would you expect to get and in what percentages?**



2. This structure is observed in prophase of Meiosis I.

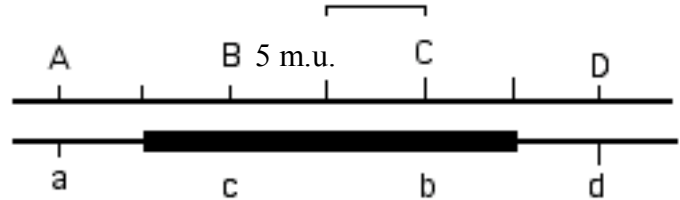
a) What two things could cause it?

b) how could you tell them apart? (list three ways)



3. The thick line on this diagram represents a deletion. You mate this individual to a chromosomally normal homozygous recessive individual. Every hatch mark is 5 map units

What percent of the offspring do you expect to have each of the following **phenotypes**.



a) Ad

b) Bd

c) Bc

4. If you needed to make a YAC what elements would you need to make sure were part of it? (Write as a list, with a short explanation next to each element)