Study Guide: Linkage

1. When does recombination occur?

2. What is linkage and what does it represent in terms of genetic loci and their chromosomal locations?

3. What is a bivalent and how might cross-overs be distributed across sister chromatids?

4. What is a trans linkage arrangement?

    a. Dominant alleles at linked genetic loci derived from the same parent?
    b. Dominant alleles at linked genetic loci derived from different parents?

5. Can there be more than one cross-over per bivalent?

6. How many phenotypic classes are there in a dihybrid ratio and what is their expectation for a random diploid population derived by doubled haploidy?

7. "The recombination frequency between two linked loci is the sum of the recombinant phenotypic classes divided by the total population size."

    a. True?
    b. False?

8. Are double cross-overs frequent at recombination frequencies of <10%?

9. Three loci (A, B, and C) are linked in that order. Does the recombination frequency between A and C (r_{AC}) equal the sum of the recombination frequencies between A and B (r_{AB}) and B and C (r_{BC})?

10. What are two reasons to make a genetic linkage map?

11. Is chromosome 1A of bread wheat homoeologous to chromosome 1H of barley?

12. Are there syntenic regions of *Fragaria* Group 7 on *Prunus* Group 6?