CHAPTER 3 Answers to Problems

Problem 3.1. (a) A pericentric inversion.

Problem 3.2.

Indiv.	Locus *A*	Locus *B*	Locus *C*
1	***11***	*11*	*11*
2	***12***	*11*	*13*
3	*11*	*11*	*11*
4	*11*	*11*	*12*
5	*12*	*11*	*11*
6	*11*	*11*	*13*
7	*11*	*11*	*12*
8	*11*	*11*	*11*
9	*12*	*11*	*12*
10	*11*	*11*	*12*
11	*11*	*11*	*13*
12	*11*	*11*	*11*
13	*11*	*11*	*12*
14	*12*	*11*	*12*
15	*11*	*11*	*12*
16	***22***	*11*	*22*
17	*12*	*11*	*12*
18	*11*	*11*	*11*
19	*11*	*11*	*11*
20	*12*	*11*	*12*

Problem 3.3. 2/3=0.67.

Problem 3.4. 0.3; 0; 0.60.

Problem 3.5. 0.30.

Problem 3.6. *11* x *12* → *11* (50%) & *12* (50%)

Problem 3.7. *11* x *22* → *12* (100%); *12* x *13* → *11* (25%) & *12* (25%) & *13* (25%) & *23* (25%)

Problem 3.8. Hsing-Hsing.

Problem 3.9. Egg dumping occurs in this population because two progeny from *FF* mothers did not contain the *F* allele. Extra-pair copulations are also likely occurring as indicated by the four *FS* heterozygotes produced by *SS* x *SS* matings. However, these four progeny could have resulted from egg dumping.

Problem 3.10. The gray male must have the recessive *g* allele because his mother was white (*gg*).

(a) *gg* x *Gg* → Gg (50%) & *gg* (50%).

(b) *g*W x *Gg* → *Gg* (25%) & *gg* (25%) & *G*W (25%) & *g*W (25%).

Thus, one-half of all sons (ZZ) will be gray and one-half white, and one-half of the daughters (ZW) will be gray and one-half white.

Problem 3.11. It appears this anemone is reproducing asexually by cloning since all progeny have the same genotype as their mother.