## Meiosis and Sexual Life Cycles Chapter 13

- 1. Describe how traits from parents are transmitted to their offspring.
- 2. Describe how an asexually reproducing eukaryotic organism produces offspring that are genetically identical to each other and to the parents.
- 3. Define somatic cell, gamete, zygote, fertilization, homologous chromosome, sex chromosome, autosome, haploid, and diploid.
- 4. A horticulturalist is breeding orchids, trying to obtain a plant with a unique combination of desirable traits. After many years, she finally succeeds and wants to produce more plants like the successful one. Make a claim about whether she should crossbreed it with another plant or clone it. Justify your claim.
- 5. Describe how the alternation of meiosis and fertilization maintain the normal chromosome number between generations.
- 6. Make a drawing to show how meiosis reduces the chromosome number.
- 7. Describe how independent assortment, crossing over and random fertilization increase genetic diversity through sexual reproduction.
- 8. Although meiosis results in genetic diversity, identify the source of all original variation among alleles of any given gene.
- 9. Fruit flies have a diploid number of 8, and honeybees have a diploid number of 32. Assuming no crossing over, is the genetic variation among offspring from any two parents likely to be greater in fruit flies or honeybees. Support your answer.
- 10. Predict the amount of genetic variation that would result from crossing over if maternal and paternal chromatids had the same alleles for every gene.