Chapter 4 HW Review Answers

Section 4.1

1. Acquired traits are not determined by genes; inherited traits are.
2. Inherited traits are controlled by two factors, and one factor can mask another
3. Recessive
4. Genotype describes the genes that code for traits; phenotype describes the traits that are expressed
5. If a person has one recessive and one dominant allele, the dominant allele will be expressed. No a person can have a recessive allele and it will not show in the phenotype
6. Brown. The parents must both carry two recessive genes for brown fur, otherwise a single dominant black allele makes them black.

Section 4.2

1. They show how the parents’ alleles may be passed on to offspring
2. Ratios compare one number to another number. A percentage is a ratio that compares a number to 100
3. Determine each possible outcome. Represent it as a ratio in fraction form. Multiply by 100 to find the percentage.
4. Two blocks have one recessive and one dominant allele. One block has two dominant alleles, and one block has two recessive alleles. The chance for each possible outcome is 75% green and 25% yellow.
5. The probability is 25%. Two blocks will show one recessive and one dominant allele. One block will show two dominant alleles. One block will show two recessive alleles.

Section 4.3

1. a gamete (haploid)
2. A sperm and an egg combine to form a new cell
3. Meiosis produces a total of four 1n (haploid) gametes instead of two 2n (diploid) cells. It involves 2 divisions after DNA is copied, rather than 1 division after DNA is copied.
4. Prophase I: one cell contains twice usual number of chromosomes for species. Prophase II: two cells each with two copies of one homolog of each chromosome pair.
5. Meiosis: produces four 1n (haploid) cells, 2 divisions; however, Mitosis: produces two 2n (diploid) cells, one division. Both: DNA copied, chromosomes divide, new cells form.
6. One cell divides twice, so one cell produces four. The cells are 1n because DNA was only copied once.