7-6: Find Probabilities of Compound Events

1. Sample answer: A model can represent the sample space, and the sample space can be used to determine the probability of an event.

2. Sample answer: Each model shows the complete sample space of a compound event.

3. Sample answer: You can find the probability of both simple and compound events with the ratio of the number of favorable outcomes to the number of total possible outcomes.

4. P(Whitney, Prize 2) = $\frac{1}{9}$

5. a. P(3, heads) = $\frac{1}{8}$

   b. P(odd number, heads) = $\frac{2}{8}$, or $\frac{1}{4}$

6. 2
   4
   $\frac{2}{4}$; 50

7. 2
   12
   $\frac{2}{12}$; 16$\frac{2}{3}$

8. P(heads up and (1, 2, or 4)) = $\frac{3}{10}$

9. P(at least two heads) = $\frac{4}{8}$, or 50%

10. Sample answer: If less of either wheel is red, Gary's chance of winning decreases.

11. P((long or short) and (pink or blue)) = $\frac{4}{9}$

12. P(no Y) = P(no O) = $\frac{20}{30}$;
    Sample answer: The probability of choosing a password without any one of the 6 letters is equal because the number of favorable outcomes is the same in each case.

13. a. 36; Sample answer: Each time the cube is rolled there are 6 possibilities. Since the cube is rolled twice, whatever the first number is rolled has the possibility of being paired with 6 different numbers. I multiplied 6 and 6 to find the number of possible combinations.

    b. P(sum of 10) = $\frac{3}{36}$ = $\frac{1}{12}$