Solutions to Probability Worksheet 2
Questions 5 through 10

5. You have two independent events, “Heads on coin” and “6 on die”. So use Rule #3 to find P(Heads on coin)*P(6 on die).

6. You have three independent events, “1 on first die”, “1 on second die”, and “1 on third die”. So use Rule #3 to find P(1 on first die)*P(1 on second die)*P(1 on third die).

7. Since you replace the card after selecting the first one, the two events “Ace on first card” and “Ace on second card” are independent. So use Rule #3 to find
P(Ace on first card)*P(Ace on second card).

8. Since I do not replace the first card, the two events “Ace on first card” and “Ace on second card” are not independent. (The probability that you get an Ace on the second card is determined by whether or not the first card is an Ace. So the two events are not independent.) So use Rule #4 to find
P(Ace on first card)*P(Ace on second given the first was an Ace).

9. The two events “1 on red die” and “1 on white die” are not mutually exclusive because they can happen at the same time. So you need to use Rule #2 to find
P(1 on red die) + P(1 on white die) – P(1 on red die and 1 on white die) where
P(1 on red die and 1 on white die) can be found by noting the two events are independent and applying Rule #3.

10. The two events “5 on die” and “6 on die” are mutually exclusive. So use Rule #1 to find P(5 on die) + P(6 on die).