Binomial Formula Practice: Chapter 15

1. A coin is tossed 17 times. Find the chance of getting a result not more than 1 head away from the expected number of heads. (Suggestion: use a bit of logic to slightly simplify the process.)

2. Seventeen draws are made with replacement from a standard deck of cards. Find the chance of getting exactly seven face cards. (Face cards are: Jack, Queen, King, Ace.)

3. Twelve cards are drawn from a standard deck of cards with replacement.

    (a) Find the chance that at least one of the twelve cards drawn is a four. (Round your answer to the nearest one hundredth of 1%.)
    (b) Find the chance that exactly two of the twelve cards drawn are fours. (Round your answer to the nearest one hundredth of 1%.)

4. A die is rolled 7 times. Find the chance that:

    (a) a roll with less than three spots never occurs.
    (b) the face with four spots occurs at least once among the 7 rolls.
    (c) a roll with an even number of spots occurs exactly four times among the 7 rolls.
    (d) a roll with an even number of spots occurs exactly three times among the 7 rolls.

5. A fair coin was tossed 11 times and all 11 of the tosses resulted in a head.

    Find the chance that the 12th roll results in a:

    (a) head.
    (b) tail.

6. A random-number generator independently produces digits from 0 to 9 inclusive. Find the chance that among a series of ten digits produced there will be exactly three 7's.

Answers:

1. About 37%.

2. About 12.8%.

3. (a) 61.73%.
    (b) 17.54%.

4. (a) About 6%.
    (b) About 72%.
    (c) About 27%.
    (d) About 27%.

5. (a) 50%.
    (b) 50%.

6. About 6%.