Show all work

1. The choices for a sandwich are 4 different meats, and 5 different cheeses. How many different sandwiches of 2 meats and 2 cheeses could you make?
2. If a numbered cube is tossed, what is the probability that either an even number or a number less than 5 will be on top?
3. There are 6 blue and 4 red marbles in a bag. What is the probability of choosing two blue marbles <u>without</u> replacement?
4. A local department store will put a 3-letter monogram on your selection of towels. How many different monograms are possible?
5. You roll a red numbered cube and a blue numbered cube. What is the probability that you will get
   A) A red 5 and blue 6?   B) The sum of 11?
6. When choosing from the numbers 1-280, how many numbers are
   A)   Divisible by 2 or 7?   B) Divisible by 2 and 7?

   C)What is the probability that a randomly selected number from 1-280 is NOT divisible by 2 or 7?

7. How many different signals can be shown by arranging 3 flags in a row if 7 different flags are available?

8. The Hawaiian alphabet has only 12 letters. How many permutations could be made using 5 different letters?

9. The weather report says that the probability of rain is 30% on Monday and 50% on Tuesday. If these are independent events, what is the probability that it will rain: A) both days   B) neither day?   C) Monday, but not Tuesday D) Tuesday not Monday?

10. In a word game, you replace 2 letters on your tray on your turn. The letters you have are E,X,J,U,F,A and Z. In how many ways could you select 1 consonant and 1 vowel to discard?

11. Suppose that 65% of the students in the junior class are taking chemistry, 40% are taking German, and 20% are taking both. What is the probability that a junior student selected at random: A) is taking chemistry, if you know they are in German? B) is taking German, if you know they are taking chemistry?

12. Scott has found some old books in the attic. Out of the 28 books, he notices that 8 are novels and 6 are about history. However, 3 out of these 14 books are historical novels. If he picks one book to read at random from the 28, what is the probability that it is a novel or history?

13. Martha Stewart has 14 friends to seat around her circular antique dining table. In how many different ways can she arrange her guests?

14. A 3 letter password is given to each student, however, the letter O and Q may not be used and no letter can be repeated. How many students can receive a password?

15. Five apples, 7 oranges, and 4 peaches are mixed in a fruit bin. If 4 pieces of fruit are picked out at random, what is the probability of picking: A) 2 oranges and 2 peaches?   B) 4 oranges or 4 apples?

Answers:

1. 60
2. 5/6
3. 1/3
4. 17,576
5. A)1/36 B) 1/18
6. A)160 B) 20 C) 3/7
7. 210
8. 95040
9. A) 15% B) 35% C) 15% D) 35%
10. 12
11. A) ½ B) 4/13
12. 11/28
13. 13!
14. 12,144
15. A) 9/130 B) 2/91