1. A box has 10 red apples, 7 green apples, and 12 pears. If seven items are selected from the box at the same time,

   (a) Find the probability of picking exactly 5 apples.

$$\frac{C(17,5) * C(12,2)}{C(29,7)}$$

   (b) Find the probability of picking exactly 4 red apples and at least 2 green apples.

$$\frac{C(10,4)C(7,2)C(12,1) + C(10,4)C(7,3)}{C(29,7)}$$

2. A group of friends consists of 9 boys and 6 girls. Five people are randomly selected and placed in a row for a picture. What is the probability that in the picture the boys and girls alternate?

$$\frac{9 * 6 * 8 * 5 * 7 + 6 * 9 * 5 * 8 * 4}{15 * 14 * 13 * 12 * 11}$$