1. A bag contains 3 red marbles, 4 green marbles, 5 blue marbles, 6 yellow marbles, and 2 purple marbles.

    (a) In how many ways can 8 marbles be taken from the bag?

    (b) In how many ways can 2 red marbles, 2 green marbles, 2 blue marbles, and 2 yellow marbles be taken from the bag?

    (c) In how many ways can one marble of each color be taken from the bag?

    (d) In how many ways can 3 blue marbles, 2 yellow marbles, and one green marble be taken from the bag?

    (e) In how many ways can five marbles be drawn from the bag?

    (f) In how many ways can seven marbles be drawn from the bag?

2. In how many ways can three (3) books be arranged on a shelf?

3. In how many ways can three (3) out of four (4) books be arranged on a shelf?

4. In how many ways can three (3) out of four (4) books be selected?

5. You have 3 sweaters, 4 pairs of pants/slacks, 5 shirts, 6 pairs of socks, and 2 belts.

    (a) How many outfits consisting of a sweater, a pair of pants/slacks, a shirt, a pair of socks, and a belt can be made?

    (b) How many outfits consisting of a pair of pants/slacks, a shirt, a pair of socks, and a belt can be made?

    (c) How many outfits consisting of a pair of pants/slacks, a shirt, a pair of socks, and a belt can be made if you may or may not wear a sweater?

    (d) How many outfits consisting of a pair of pants/slacks, a shirt, and a belt can be made if you may or may not wear a sweater and if you may or may not wear socks?

6. How many five-card hands can be dealt from a fair poker deck?

7. How many five-card hands containing two red cards and three black cards can be dealt from a fair poker deck?

8. How many five-card hands containing three hearts (♥) and two spades (♠) can be dealt from a fair poker deck?

9. How many five-card hands containing two 2's and three 7's can be dealt from a fair poker deck?

10. How many five card hands containing two clubs (♣), one diamond (♦), one heart (♥), and one spade (♠) can be dealt from a fair poker deck?