

1. A bag contains 7 red marbles, 8 blue marbles and 3 green marbles. If three marbles are drawn out of the bag, what is the *exact* probability that all three marbles drawn will be blue?

$$\frac{8}{18} \cdot \frac{7}{17} \cdot \frac{6}{16} = \frac{336}{4896} = \frac{7}{102}$$

2. A bag contains 8 red marbles, 3 blue marbles and 2 green marbles. If two marbles are drawn out of the bag, what is the *exact* probability that both marbles drawn will be blue?

$$\frac{3}{13} \cdot \frac{2}{12} = \frac{6}{156} = \frac{1}{26}$$

3. A bag contains 2 red marbles, 3 blue marbles and 5 green marbles. If two marbles are drawn out of the bag, what is the probability, *to the nearest 10th of a percent*, that both marbles drawn will be red?

$$\frac{2}{10} \cdot \frac{1}{9} = \frac{2}{90} \approx 0.02222 = 2.222\% \approx 2.2\%$$

4. A bag contains 8 red marbles, 5 blue marbles and 7 green marbles. If three marbles are drawn out of the bag, what is the probability, *to the nearest 1000th*, that all three marbles drawn will be green?

$$\frac{7}{20} \cdot \frac{6}{19} \cdot \frac{5}{18} = \frac{210}{6840} \approx 0.0307 \approx 0.031$$

5. A bag contains 8 red marbles, 7 blue marbles and 2 green marbles. If two marbles are drawn out of the bag, what is the *exact* probability that both marbles drawn will be green?

$$\frac{2}{17} \cdot \frac{1}{16} = \frac{2}{272} = \frac{1}{136}$$

6. A bag contains 5 red marbles, 7 blue marbles and 4 green marbles. If two marbles are drawn out of the bag, what is the probability, *to the nearest 1000th*, that both marbles drawn will be red?

$$\frac{5}{16} \cdot \frac{4}{15} = \frac{20}{240} \approx 0.08333 \approx 0.083$$

7. A bag contains 4 red marbles, 7 blue marbles and 8 green marbles. If two marbles are drawn out of the bag, what is the probability, *to the nearest 10th of a percent*, that both marbles drawn will be green?

$$\frac{8}{19} \cdot \frac{7}{18} = \frac{56}{342} \approx 0.16374 = 16.374\% \approx 16.4\%$$

8. A bag contains 8 red marbles, 3 blue marbles and 7 green marbles. If three marbles are drawn out of the bag, what is the probability, *to the nearest 1000th*, that all three marbles drawn will be red?

$$\frac{8}{18} \cdot \frac{7}{17} \cdot \frac{6}{16} = \frac{336}{4896} \approx 0.06863 \approx 0.069$$

9. A bag contains 2 red marbles, 4 blue marbles and 8 green marbles. If two marbles are drawn out of the bag, what is the probability, *to the nearest 10th of a percent*, that both marbles drawn will be blue?

$$\frac{4}{14} \cdot \frac{3}{13} = \frac{12}{182} \approx 0.06593 = 6.593\% \approx 6.6\%$$

10. A bag contains 3 red marbles, 7 blue marbles and 4 green marbles. If two marbles are drawn out of the bag, what is the probability, *to the nearest 1000th*, that both marbles drawn will be green?

$$\frac{4}{14} \cdot \frac{3}{13} = \frac{12}{182} \approx 0.06593 \approx 0.066$$