Probability With and Without Replacement Worksheets

ANSWER / CASE 1

A bag contains 3 red and 4 blue counters. Each counter is equally likely on a random draw. Find the probability of two reds (a) replacing and mixing after the first draw, (b) without replacement.

Terracotta = red; green = blue



ANSWER: With replacement: 9/49. Without replacement: 1/7.
1. Multiply the probability of red first by the conditional probability of red second.
2. Without replacement after a red, both the red count and total decrease by one.

Probability With and Without Replacement Worksheets

ANSWER / CASE 2

A bag contains 4 red and 4 blue counters. Each counter is equally likely on a random draw. Find the probability of two reds (a) replacing and mixing after the first draw, (b) without replacement.

Terracotta = red; green = blue



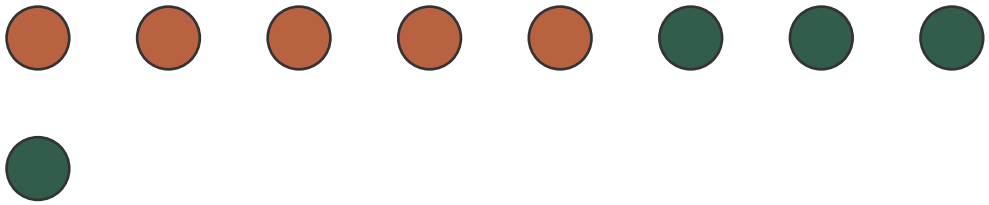
ANSWER: With replacement: 1/4. Without replacement: 3/14.
1. Multiply the probability of red first by the conditional probability of red second.
2. Without replacement after a red, both the red count and total decrease by one.

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ANSWER / CASE 3

A bag contains 5 red and 4 blue counters. Each counter is equally likely on a random draw. Find the probability of two reds (a) replacing and mixing after the first draw, (b) without replacement.

Terracotta = red; green = blue



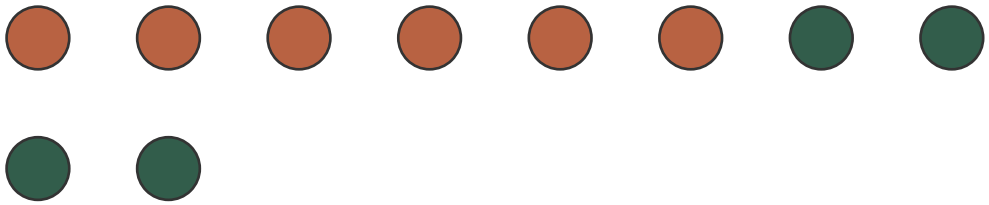
ANSWER: With replacement: 25/81. Without replacement: 5/18.
1. Multiply the probability of red first by the conditional probability of red second.
2. Without replacement after a red, both the red count and total decrease by one.

Probability With and Without Replacement Worksheets

ANSWER / CASE 4

A bag contains 6 red and 4 blue counters. Each counter is equally likely on a random draw. Find the probability of two reds (a) replacing and mixing after the first draw, (b) without replacement.

Terracotta = red; green = blue



ANSWER: With replacement: 9/25. Without replacement: 1/3.
1. Multiply the probability of red first by the conditional probability of red second.
2. Without replacement after a red, both the red count and total decrease by one.