Let's consider the following example:

Event A: Tossing a fair coin and getting heads.

Event B: Tossing a fair coin and getting tails.

Event C: The sum of the numbers rolled on two fair six-sided dice is odd.

In this example, A and B are independent events because the outcome of one coin toss does not affect the outcome of the other coin toss. The probability of getting heads or tails on a coin toss is always 1/2.

Now, let's consider the conditional probabilities involving event C:

P(C|A) = 1/2

P(C|B) = 1/2

P(C|A ∩ B) = 1/2

These conditional probabilities indicate that whether event C occurs is completely determined if we know whether events A and B occurred. However, if we know only one of these events (either A or B), then the occurrence of event C becomes completely undetermined.

Now, let's consider the joint probability of events A, B, and C:

P(A ∩ B ∩ C) = P(C|A ∩ B) \* P(A ∩ B) = (1/2) \* (1/2) = 1/4

However, if we calculate the individual probabilities of A, B, and C, we can see that they are not independent:

P(A) = 1/2

P(B) = 1/2

P(C) = 1/2

If events A, B, and C were independent, the joint probability P(A ∩ B ∩ C) would be equal to P(A) \* P(B) \* P(C). But in this example, 1/4 ≠ (1/2) \* (1/2) \* (1/2), indicating that events A, B, and C are not independent.

Therefore, events A, B, and C are pairwise independent (A and B are independent, A and C are independent, and B and C are independent), but they are not independent together.

Let's consider the probabilities in this scenario:

Let G1 be the event that the first marble chosen is green.

Let G2 be the event that the remaining marble is green.

We are given that the first marble chosen is green, so P(G1) = 1.

Since the first marble chosen is green, there are two possible cases for the initial marble:

Case 1: The initial marble is green, and the remaining marble is green.

Case 2: The initial marble is green, but the remaining marble is blue.

The probability that the remaining marble is green can be calculated using conditional probability:

P(G2|G1) = P(G1 ∩ G2) / P(G1)

In Case 1, both marbles are green, so P(G1 ∩ G2) = 1/2 \* 1 = 1/2.

In Case 2, the remaining marble is blue, so P(G1 ∩ G2) = 1/2 \* 0 = 0.

Therefore, P(G2|G1) = (1/2) / 1 = 1/2.

So, the probability that the remaining marble is also green, given that the first marble chosen is green, is 1/2.