

**Exercise 2.5.** We have two urns. The first urn contains three balls labeled 1, 2 and 3. The second urn contains four balls labeled 2, 3, 4 and 5. We choose one of the urns randomly, so that the probability of choosing the first one is  $1/5$  and the probability of choosing the second is  $4/5$ . Then we sample one ball (uniformly at random) from the chosen urn. What is the probability that we picked a ball labeled 2?

**Exercise 2.9.** We return to the setup of Exercise 2.5. Suppose that ball 3 was chosen. What is the probability that it came from the second urn?