

Math 10B Probability Review Worksheet

Suppose you repeatedly roll two fair 6-sided dice.

1. What is the probability that the two dice have the same value when you roll both of them once?
2. What is the probability that both dice have the same value on exactly 5 of the rolls if you roll the dice 10 times each?
3. What is the expected number of times that both dice will have the same value if you roll both 10 times each?
4. If you keep rolling both dice until you they both have the same value, what is the probability that you roll them 10 times each (i.e. fail 9 times and then succeed)?
5. What is the expected number of times you have to roll before both dice have the same value (i.e. the expected number of failures)?
6. Suppose you have a bag of 100 marbles, 10 of which are agates. If you select 15 of the marbles at random, what is the probability that you select 3 agates?
7. What is the expected number of agates you will select?