

Class 4 Homework

1. At a dog training school, dogs can learn to do two tricks: sit and roll over. There are 50 dogs in total and each can do at least one trick. 35 dogs can sit and 25 dogs can roll over. How many dogs can sit and roll over?
2. There is a bag of marbles with 2 red, 5 blue, and 3 green marbles in each. Someone takes out one marble at random, puts it back in the bag, and draws another marble at random. What is the probability that both colours will be green?

Answers

1. Total number of dogs = (Dogs that can sit) + (Dogs that can roll) – (Dogs that can sit and roll)
 $50 = 35 + 25 - (\text{Dogs that can do both})$
 $50 = 60 - (\text{Dogs that can do both})$
Dogs that can do both = 10
2. Total number of marbles = 10
Probability of getting green on first draw = $\frac{3}{10}$
Probability of getting green on second draw = $\frac{3}{10}$
Probability of getting green on both draws = $\frac{3}{10} \times \frac{3}{10} = \frac{9}{100}$
 \therefore There is a $\frac{9}{100}$ probability that both colours will be green.