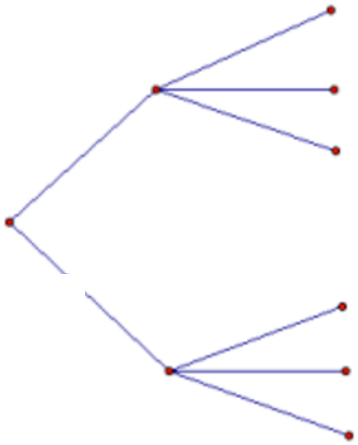
1. A casino game consists to two bags, each containing a certain number of coloured balls. Bag A contains 4 red balls and 6 blue balls. Bag B has 4 red balls, 3 blue balls and 2 white balls. A ball is then taken from Bag A – its colour is recorded – and then that ball is **placed into Bag B**. A ball is then selected from Bag B to complete the game.

   a. Complete the following tree diagram.

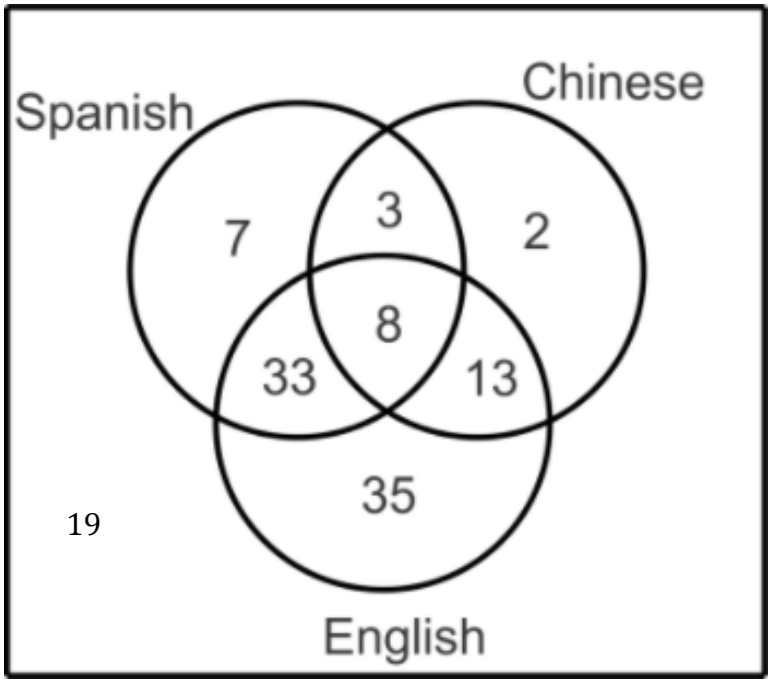


   b. How probable is it that you finish the game with a blue and a white ball?

   c. How probable is it that you have selected two balls of the same colour?

   d. How probable is it that you select at least one red ball?

2. The international club at a school has 120 members, many of whom speak multiple languages. The most commonly spoken languages in the club are English, Spanish and Chinese. Use the Venn Diagram below to determine the probability of selecting a student who:



a. speaks Spanish and Chinese, but not English

b. speaks English, given that they speak Chinese

c. speaks both Spanish and Chinese given that they do not speak English