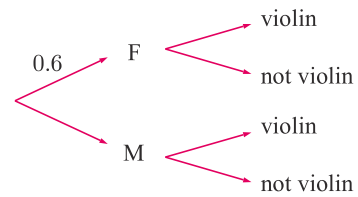


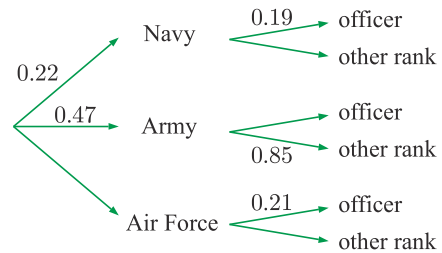
**EXERCISE 22F**

- 1 Of the students in a class playing musical instruments, 60% are female. 20% of the females and 30% of the males play the violin.

- a Copy and complete the tree diagram.  
 b What is the probability that a randomly selected student:  
     i is male and does not play the violin  
     ii plays the violin?



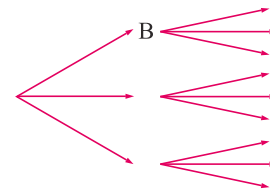
- 2 a Copy and complete this tree diagram about people in the armed forces.  
 b What is the probability that a member of the armed forces:  
     i is an officer  
     ii is not an officer in the navy  
     iii is not an army or air force officer?



- 3 Suppose this spinner is spun twice.



- a Copy and complete the branches on the tree diagram shown.



- b Find the probability that black appears on both spins.  
 c Find the probability that yellow appears on both spins.  
 d Find the probability that different colours appear on the two spins.  
 e Find the probability that black appears on either spin.
- 4 The probability of rain tomorrow is estimated to be  $\frac{1}{5}$ . If it does rain, Mudlark will start favourite in the horse race, with probability  $\frac{1}{2}$  of winning. If it is fine, he only has a 1 in 20 chance of winning. Display the sample space of possible results of the horse race on a tree diagram. Hence determine the probability that Mudlark will win tomorrow.
- 5 Machine A makes 40% of the bottles produced at a factory. Machine B makes the rest. Machine A spoils 5% of its product, while Machine B spoils only 2%. Using an appropriate tree diagram, determine the probability that the next bottle inspected at this factory is spoiled.
- 6 Jar A contains 2 white and 3 red discs. Jar B contains 3 white and 1 red disc. A jar is chosen at random by the flip of a coin, and one disc is taken at random from it. Determine the probability that the disc is red.
- 7 The English Premier League consists of 20 teams. Tottenham is currently in 8th place on the table. It has 20% chance of winning and 50% chance of losing against any team placed above it. If a team is placed below it, Tottenham has a 50% chance of winning and a 30% chance of losing. Find the probability that Tottenham will draw its next game.