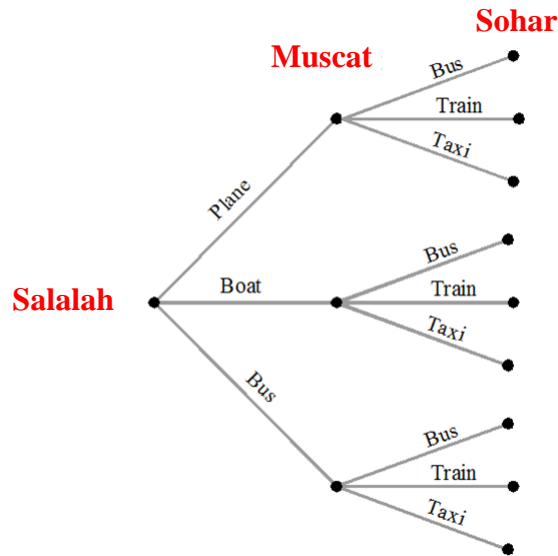


# SET 3: Pure Mathematics

## Tutorial 4

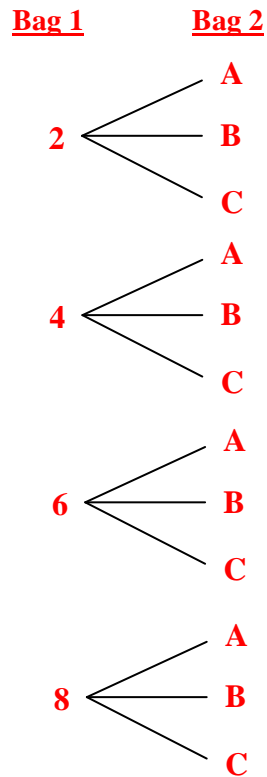
1. Suppose a salesman can travel from Salalah to Muscat by a plane, boat or bus, and from Muscat to Sohar by a bus, train or taxi. List all the possible ways he can travel from Salalah to Sohar using a tree diagram.

[Ans. ]



2. A bag contains 4 cards numbered 2, 4, 6 and 8. A second bag contains 3 cards labelled A, B and, C. One card is drawn at random from each bag. Draw a tree diagram for this experiment.

[Ans. ]



3. A jar contains 3 red marbles, 7 green marbles and 10 white marbles. If a marble is drawn from the jar at random, what is the probability that this marble is white? [Ans. 0.5]
4. A jar contains 5 red, 6 green and 4 blue marbles? If a marble is drawn at random, what is the probability of choosing a marble that is not green? [Ans.  $\frac{3}{5}$  or 0.60]
5. The blood groups of 200 people are distributed as: 50 type A, 65 type B, 70 type O and 15 type AB. If a person from this group is selected at random, what is the probability that this person has type O blood? [Ans.  $\frac{7}{20}$  or 0.35]
6. What is the probability of landing on an odd number after spinning a spinner with 7 equal sectors numbered 1 through 7? [Ans.  $\frac{4}{7}$ ]
7. What is the probability of getting a 7 after rolling a single die numbered 1 to 6? [Ans. 0]
8. If a standard die is tossed, what is the probability of rolling an even or an odd number? [Ans. 1]
9. Jolly is playing cards with her friend. She draws a card from a pack of 30 cards numbered 1 to 30. What is the probability of drawing a number that is a perfect square? [Ans.  $\frac{1}{6}$ ]
10. If a family has 3 children, what would be the probability of having one boy? [Ans.  $\frac{3}{8}$ ]
11. Two fair dice are numbered: -2, -1, 0, 1, 2, and 3 instead of the usual numbers. If those two special dice are rolled, what is the probability of getting a sum of zero. [Ans.  $\frac{5}{36}$ ]
12. If two standard dice are rolled and the results are multiplied by each other to give the final score. What is the probability of getting a final score of 20? [Ans.  $\frac{1}{18}$ ]
13. Suppose that 7 people enter a swimming competition. Assuming that there are no ties; in how many ways could the gold, silver, and bronze medals be awarded? [Ans. 210]
14. How many different committees of 3 people can be chosen to work on a special project from a group of 9 people? [Ans. 84]
15. John bought a machine to make fresh juice. He has five different fruits: strawberries, oranges, apples, pineapples, and lemons. If he uses two fruits only to make a fresh juice, how many different juice drinks can John make? [Ans. 10]
16. English letters are to be used to create a four-letters password to login a software application. If no letter can be used more than once, and using the upper or the lower case of letters makes no difference, in how many ways can this password be created? [Ans. 358,800]