

Name: _____

ASM Tuition Academy
Conditional Probability

Instructions:

- Use **black** ink or ball-point pen.
- Answer all questions.
- Answer the questions in the spaces provided
- there may be more space than you need.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all you're working out**.

Information:

- The marks for each question are shown in brackets
- use this as a guide as to how much time to spend on each question.

Advice:

- Read each question carefully before you start to answer it.
- Keep an eye on time.
- Try to answer every question.
- Check your answers if you have time at the end.

Q1 - There are only white marbles and black marbles in a bag. There are 6 white marbles and 4 black marbles.

Labour takes at random a marble from the bag. He does not put the marble back in the bag.

Labour takes at random a second marble from the bag.

a) Complete the probability tree diagram.

(2)

b) Work out the probability that Labour takes two marbles the same colour

(2)

(Total for Question 1 is 4 marks)

Q2- Each day Ali wears either a brown shirt or a pink shirt to work.

On Wednesday the probability he wears a brown shirt is 0.6

If Ali wears a brown shirt on Wednesday, the probability that he will wear a brown shirt on Thursday is 0.35. If he does not wear a brown shirt on Wednesday, the probability that he will wear a brown shirt on Thursday is 0.68

(a) Complete the probability tree diagram.

(2)

(b) Work out the probability Ali wears different coloured ties on Wednesday and Thursday

(3)

(Total for Question 2 is 5 marks)

Q3- There are 8 balls in a box.

5 of the balls are green.

3 of the balls are white.

Two balls are taken at random from the box.

Work out the probability that one ball of each colour is taken.

You must show your working

(Total for Question 3 is 4 marks)

Q4- There are 10 balls in a bag.

6 of the balls are Yellow. 4 of the balls are White. 2 of the balls are orange.

Ali takes two balls at random from the bag.

Work out the probability that both balls Ali takes are the same colour.

You must show your working.

(Total for Question 4 is 4 marks)

Q5- There are seven number balls:



Ayesha takes a ball at random. She does not replace the ball.

Ayesha then takes another ball at random.

- (a) Calculate the probability that both balls have the same number on them.

(3)

- (b) Calculate the probability that the number on the second ball Ayesha takes is greater than the number on the first ball she takes.

(3)

(Total for Question 5 is 6 marks)

Q6- 50 people were asked if they like Turtle, crow, and hound.

Every person liked at least one of the species.

18 of the people like all three species.

31 of the people like hound.

34 of the people like Turtle.

22 of the people like Turtle and crow.

7 of the people like Turtle and hound but not crow.

2 of the people like crow and hound but not Turtle.

Two of the 50 people are chosen at random.

Work out the probability that they both like crow

(Total for Question 6 is 5 marks)

Q7- 45 girls were asked if they have like Cherry, Mango, or Ugni.

- 11 girls liked cherry.
- 1 girl liked all.
- 2 girls liked Cherry and Mango but not Ugni.
- 3 girls liked Mango and Ugni.
- 12 girls liked no fruit.
- Out of the 19 girls who liked Ugni, had liked atleast one of the other fruits.

Two of the 45 girls are chosen at random.

Work out the probability that they both only liked Mango

(Total for Question 7 is 5 marks)