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| Year | Mathematics Test    Further Probability |  |
|  | Name |  |

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| **Answer all questions in the spaces provided on this test paper by**  **Writing the answer in the box or in the space provided.**  **or**  **Shading in the bubble for the correct answer from the four choices provided.**  **Show any working out on the test paper.** | |
| 1. | A single coin is tossed. What is the probability (as a decimal) of a tail showing?  0.2 0.4 0.5 0.8 |
| 2. | Andrew’s television has 25 channels programmed, four of which are high definition channels. He randomly flicks to a channel.  What is the probability that it is a high definition channel? |
| 3. | A drawer has a lot of mixed utensils in it. There are 5 knives, 8 forks and 7 spoons.  A single utensil is picked from the drawer at random.  What is the probability that it is a knife? |
| 4. | A rectangular floor is tiled with square black tiles and white tiles as shown.  A ball is dropped on the floor, and bounces randomly to stop on one of the tiles.  What is the probability that it stops on a black tile? |
| 5. | What is the probability of rolling at least a 4 on a single roll of a die? |
| 6. | A container holds 40 marbles numbered 1 to 40.  A single marble is drawn out.  What is the probability that it is at most an 8? |
| 7. | A single card is drawn from a normal pack of cards. What is the probability that it is not a club? |
| 8. | The probability of winning a lottery is  .  The probability of not winning the lottery is: |
| 9. | A game of snakes and ladders uses a board that has 64 squares.  Ten squares have snakes on them.  What is the probability of **not** landing on a snake if a counter is placed at random on the board? |
| 10. | A “Chocolate Wheel” at a fete has the numbers from 1 to 100 randomly arranged around the circumference.  John buys all the tickets with numbers less than 31.  What is the probability that he wins? |
| 11 | A single card is drawn from a normal pack of 52 playing cards. What is the probability that it is a red queen? |
|  | Questions 12 – 14 refer to the information below:  Five friends play both music and sport.  They have nine other friends who play sport only and six other friends who play music only.  They put all their names into a hat to choose one friend to be their representative on a school committee. |
| 12. | What is the probability that the friend chosen plays both music and sport? |
| 13. | What is the probability that the friend chosen plays sport only? |
| 14. | What is the probability that the friend chosen plays either music or sport, but not both? |
|  | Questions 15 – 17 refer to the Venn diagram which shows the Sports played by the students in a class.  One student is chosen at random from the class. |
| 15. | What is the probability that the student plays Netball? |
| 16. | What is the probability that the student does not play Netball or Cricket? |
| 17. | What is the probability that the student plays both Netball and Cricket? |
| 18. | What is the probability that the student plays cricket or netball or both? |
|  | Questions 19 – 22 refer to the two way table, which shows the ages and gender of the people at a barbeque.     |  |  |  |  | | --- | --- | --- | --- | |  | Male | Female | Total | | Age > 20 | 8 | 12 | 20 | | Age | 12 | 16 |  | | Total |  | 28 |  | |
| 19. | Complete the missing values in the table. |
| 20. | If a person at the barbeque is chosen at random, what is the probability that they are a male whose age is greater than 20? |
| 21. | If a person at the barbeque is chosen at random, what is the probability that they are a female? |
| 22. | If a male who was at the barbeque is chosen at random, what is the probability that he is aged 20 or under? |

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| Year | Mathematics Test    Further Probability |  |
|  | ANSWERS |  |

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| **Answer all questions in the spaces provided on this test paper by**  **Writing the answer in the box or in the space provided.**  **or**  **Shading in the bubble for the correct answer from the four choices provided.**  **Show any working out on the test paper.** | |
| 1. | A single coin is tossed. What is the probability (as a decimal) of a tail showing?  0.2 0.4 0.5 0.8 |
| 2. | Andrew’s television has 25 channels programmed, four of which are high definition channels. He randomly flicks to a channel.  What is the probability that it is a high definition channel? |
| 3. | A drawer has a lot of mixed utensils in it. There are 5 knives, 8 forks and 7 spoons.  A single utensil is picked from the drawer at random.  What is the probability that it is a knife?  1  4 |
| 4. | A rectangular floor is tiled with square black tiles and white tiles as shown.  4  25  A ball is dropped on the floor, and bounces randomly to stop on one of the tiles.  What is the probability that it stops on a black tile?  1  9 |
| 5. | What is the probability of rolling at least a 4 on a single roll of a die?  1  2 |
| 6. | A container holds 40 marbles numbered 1 to 40.  A single marble is drawn out.  What is the probability that it is at most an 8? |
| 7. | A single card is drawn from a normal pack of cards. What is the probability that it is not a club?  3  4 |
| 8. | The probability of winning a lottery is  .  The probability of not winning the lottery is: |
| 9. | A game of snakes and ladders uses a board that has 64 squares.  Ten squares have snakes on them.  What is the probability of **not** landing on a snake if a counter is placed at random on the board?  27  32 |
| 10. | A “Chocolate Wheel” at a fete has the numbers from 1 to 100 randomly arranged around the circumference.  John buys all the tickets with numbers less than 31.  What is the probability that he wins? |
| 11 | A single card is drawn from a normal pack of 52 playing cards. What is the probability that it is a red queen?  1  26 |
|  | Questions 12 – 14 refer to the information below:  Five friends play both music and sport.  They have nine other friends who play sport only and six other friends who play music only.  They put all their names into a hat to choose one friend to be their representative on a school committee. |
| 12. | What is the probability that the friend chosen plays both music and sport?  1  4 |
| 13. | What is the probability that the friend chosen plays sport only? |
| 14. | What is the probability that the friend chosen plays either music or sport, but not both?  3  4 |
|  | Questions 15 – 17 refer to the Venn diagram which shows the Sports played by the students in a class.  One student is chosen at random from the class. |
| 15. | What is the probability that the student plays Netball?  13  28 |
| 16. | What is the probability that the student does not play Netball or Cricket? |
| 17. | What is the probability that the student plays both Netball and Cricket?  1  7 |
| 18. | What is the probability that the student plays cricket or netball or both?  5  7 |
|  | Questions 19 – 22 refer to the two way table, which shows the ages and gender of the people at a barbeque.     |  |  |  |  | | --- | --- | --- | --- | |  | Male | Female | Total | | Age > 20 | 8 | 12 | 20 | | Age | 12 | 16 | 28 | | Total | 20 | 28 | 48 | |
| 19. | Complete the missing values in the table. |
| 20. | If a person at the barbeque is chosen at random, what is the probability that they are a male whose age is greater than 20?  1  6 |
| 21. | If a person at the barbeque is chosen at random, what is the probability that they are a female?  7  12 |
| 22. | If a male who was at the barbeque is chosen at random, what is the probability that he is aged 20 or under? |