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| Year  9 | | Mathematics Test  Basic Probability | | Non Calculator |
| Short Answer Section | Name : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
|  | Write all working and answers in the spaces provided on this test paper.  **Give all probabilities as fractions in simplest form, or as decimals.** | | | |
| 1. | Xanthe buys a carton of mixed bottles of fruit juice from the grocer. The carton holds 8 bottles of apple juice, 9 of orange juice and 7 of pineapple juice. If a bottle is chosen at random from the carton, what is the probability that the flavour is apple?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 2. | Write a decimal that could describe the probability of an event that is almost certain to happen.  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 3. | Lesley writes the names of the months of the year on slips of paper and places them in a hat. List the sample space for randomly selecting one slip from the hat.  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 4. | A standard die is rolled. What is the probability of rolling a 2 or 3?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 5. | The spinner shown has black, grey and white sectors. What is the probability that the arrow will stop on a white sector.  ...........................................................................  .........................................................................    ......................................................................... | | | |
| 6. | All the letters of the alphabet are written on individual cards and placed into a hat. One card is drawn out at random. What is the probability that it is a vowel?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 7. | To choose who will represent a class of 28 students on a school committee, every student’s name is written on a separate card and one is drawn out at random. What is the probability that none of Angela’s group of four friends is chosen?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 8. | The table below shows the number of cars which took each of the four roads that come off a large roundabout in a one hour period.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Road | Anna Avenue | Wendy Way | Stella Street | Charlie Circuit | | Number of cars | 23 | 34 | 16 | 7 |   A car enters the roundabout. What is the probability that it will take Stella Street, when it comes off the roundabout?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 9. | When a normal coin is tossed 300 times, how many times would you expect it to come up heads?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 10. | Tegan makes120 cupcakes for the school fete. She ices 30 with chocolate, 40 with vanilla and the rest with strawberry icing and packs them in a box. Tegan reaches into the box when her first customer arrives and randomly chooses one cupcake. What is the probability that it doesn’t have vanilla icing?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 11. | A set of traffic lights is observed for 2 hours and it is found to be red for 45 minutes, green for 60 minutes and amber for the remaining time. What is the probability that at a randomly selected time the light will be red or amber?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |
| 12. | A bag contains four red, seven blue, three yellow and six white marbles. One marble is selected at random. What is the probability that it is not white or yellow?  ..........................................................................................................................................................    .......................................................................................................................................................... | | | |

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| Year  9 | | Mathematics Test  Basic Probability | | Calculator Allowed |
| Multiple Choice Section | Name : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
|  | Mark all your answers on the accompanying multiple choice answer sheet, not on this test paper. You may do any working out on this test paper. Calculators are allowed for this section. | | | |
| 1. | Mike says that it is likely that he will go to the cricket on the weekend. Which probability best describes this statement?  A.  B.  C.  D. 1 | | | |
| 2. | The Weather Bureau predicts a 30% chance of rain tomorrow. Which fraction represents the probability that it won’t rain?  A.  B.  C.  D. | | | |
| 3. | Tim has 20 channels tuned in on his television. Of these; six are public broadcasters, nine are commercial broadcasters and the remainder are community broadcasters. Tim flicks through his channels and randomly stops on a channel. What is the probability that it is a public or community broadcaster?  A. 0.25 B. 0.3 C. 0.45 D. 0.55 | | | |
| 4. | The city of Adelaide runs a competition. Fifty thousand copies of the word A D E L A I D E are cut up and the individual letters are placed in envelopes and handed out to each new arrival at the airport. If they receive the letters A, E or I, they win a small prize. Jamal arrives at the airport during the promotion. What is the probability that he wins a prize?  A.  B.  C.  D. | | | |
| 5. | A parking lot has 36 parking spaces, 6 of which are reserved for staff and 5 of which are reserved for accessible parking. Kurt drives into the lot in a hurry and parks at random in any car space. What is the probability that it is a reserved space?  A.  B.  C.  D. | | | |
| 6. | The faces on an eight sided die are numbered 1 to 8. What is the probability of **not** rolling a 1 or a 2?  A.  B.  C.  D. | | | |
| 7. | A standard deck of cards contains 52 cards, including four Aces. Sven selects a card at random from a standard deck. What is the probability that it is not an Ace?  A.  B.  C.  D. | | | |
| 8. | |  |  |  |  |  | | --- | --- | --- | --- | --- | | 1 | 2 | 3 | 4 | 5 | | 6 | 7 | 8 | 9 | 10 | | 11 | 12 | 13 | 14 | 15 | | 16 | 17 | 18 | 19 | 20 |   A coin is dropped onto the board shown, which is divided into squares which are numbered 1 – 20. Half of the squares are black and half are white.  What is the probability that the coin lands on a white square with an even number?  A. 0.2  B. 0.3  C. 0.5  D. 0.7 | | | |
| 9. | Jack tosses a normal coin nine times and each time it comes down “Heads”. What is the probability that it will come down “Heads” on the tenth toss?  A. 0.1 B. 0.5 C. 0.7 D. 0.9 | | | |
| 10. | Four girls play a tennis competition between one another. Sam is given a 40% chance of winning, Jelena has a 30% chance and Petra and Kim are equally likely to win. What is the probability that Sam or Petra wins?  A.  B.  C.  D. | | | |
| 11. | Hayley measures the mass of the eggs that her hens lay in a week. The results are shown in the table.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Mass of eggs | < 50g | 51-60g | 61-70g | 71-80g | >80g | | Number of eggs | 6 | 18 | 45 | 55 | 26 |   If one of Hayley’s hens eggs is chosen at random, what is the probability that it’s mass is over 60 but less than 81g.  A.  B.  C.  D. | | | |
| 12. | David and Annabelle play a game where a normal six sided die is rolled. David wins if an even number is rolled. Annabelle wins if a number greater than 3 is rolled.  What is the probability that on a single roll, it is a draw (i.e. that both win)?  A.  B.  C.  D. | | | |

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| Year  9 | Mathematics Test  Basic Probability | |
| Multiple Choice  Answer Sheet | Name : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Completely fill the response oval representing the most correct answer.

1. A B C D

2. A B C D

3. A B C D

4. A B C D

5. A B C D

6. A B C D

7. A B C D

8. A B C D

9. A B C D

10. A B C D

11. A B C D

12. A B C D

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|  | Mathematics Test  Basic Probability |
| Answer Sheet |

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| Short Answer | |
| 1 |  |
| 2 | Around 0.9 |
| 3 | J, F, M, A, M, J, J, A, S, O, N, D |
| 4 |  |
| 5 |  |
| 6 |  |
| 7 |  |
| 8 |  |
| 9 | Would expect 150 heads. |
| 10 |  |
| 11 |  |
| 12 |  |

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| --- | --- |
| Multiple Choice | |
| 1 | C |
| 2 | D |
| 3 | D |
| 4 | D |
| 5 | C |
| 6 | C |
| 7 | C |
| 8 | A |
| 9 | B |
| 10 | C |
| 11 | A |
| 12 | B |