



Use this alongside our Walkthrough Guides to tick off the concepts you're confident with to plan your study and find areas of improvement!

Basic Probability

- I can describe **complementary events**
- I can state the equation which shows that two events are complementary
- I can describe **mutually exclusive events**
- I can state the equation which shows that two events are mutually exclusive
- I can describe **independent events**
- I can state the equation which shows that two events are independent
- I can explain whether two events are complementary, mutually exclusive, or independent, using the equations for each.
- I can discuss whether it makes sense for two events to be complementary, mutually exclusive, independent, or none of the above, in a real-life situation

Probability Trees

- I can draw a probability tree for a given problem, with the correct number of branches
- I can state the probability of each branch in a probability tree using the information given
- I can fill in a probability tree diagram where the situation doesn't involve **replacement**
- I understand that probabilities are multiplied along branches
- I understand that probabilities are added up and down branches
- I can describe the terms: **false positive** and **false negative**
- I can calculate the probability of a conditional event occurring from the information given in a tree diagram
- I can calculate the probability of two or more events occurring from a probability tree
- I can calculate the probability of one event and then another occurring from a tree diagram
- I can calculate the proportion of false positives and false negatives using a probability tree

Venn Diagrams

- I can draw a two-way Venn diagram for a given problem, correctly labelling each circle
- I can calculate the probability of an event occurring using the information in the Venn diagram
- I can use the formula, $P(A \cup B) = P(A) + P(B) - P(AB)$, to completely fill in a three-way Venn diagram
- I can calculate the probability of a conditional event occurring using the information in the Venn diagram
- I can draw a three-way Venn diagram for a given problem, correctly labelling each circle
- I can use any numbers given in the question to fill in all possible circles in the Venn diagram
- I can use any values which represent the number of two or more events to fill in all possible

intersections of circles in the Venn diagram

- I can explain the term, **mutually exclusive**, using Venn diagrams

Conditional Probability and Risk

- I can use the information from the question to fill in all appropriate squares in a two-way table
- I can use the total values for a column or row to calculate the value in one of the empty squares in a two-way table
- I can calculate the probability, proportion or percentage of an event or occurrence from the data in a two-way table
- I can calculate the expected number using the probability of an event or occurrence, and the population or study size
- I can define the terms **risk** and **relative risk**, and describe the difference between the two terms
- I can convert between decimals, fractions or percentages when displaying probabilities or proportions
- I can calculate the risk of an event occurring
- I can calculate a conditional probability using the values in a two-way table
- I can calculate a probability of a conditional event occurring
- I can calculate the relative risk of one event occurring compared to the other
- I can use relative risk to explain whether a statistical statement is true or false
- I can use two-way tables to discuss whether two events are independent or not

Experimental and Theoretical Probability

- I can explain the difference between **experimental** and **theoretical probability**
- I can compare experimental and theoretical probability
- I can discuss why there are sometimes differences between experimental and theoretical probability

I can discuss how variation between experimental and

theoretical probability can be reduced