

## Common misconceptions and errors

- The answer is the most important item in the solution
  - In almost all questions the workings are important, there are questions where the lack of working will result in little or no credit being awarded for a correct answer
- Errors in algebra will not be penalised if the answer is correct
  - Most algebra is checked for accuracy, so 2 compensating errors will normally be penalised
- Diagrams are not useful
  - In almost all practical contexts, a diagram will clarify thinking. In statistics, sketches of the distribution reduces the chance of errors
- There is only one value of a square root
  - A hangover from IGCSE or O-Level, where only positive roots are required. Also the only answer most calculators provide
- The number of marks allocated to a question is not an indication of the amount of work or time required
  - There often seems to be little link between the amount of work presented and the number of marks available. A single line in response to a 5 mark question is unlikely to gain much credit; similarly two pages for a single mark should be an indication that something has gone wrong. A reasonable 'rule of thumb' is that there will be 1 mark for each different process and then 1 mark for an answer
- Only topics taught at A Level can be used in answers
  - Using techniques from prior knowledge is expected. For example, the formula for the area of a trapezium could be used to calculate the area between a line and the axis in a question which is looking for the area between a curve and the line
- If part (i) cannot be answered, then there is no point attempting later parts
  - Many questions have an answer given in (i) which can be used in (ii). If a candidate knows the techniques required in later parts, at least the method marks will be available if they attempt the processes
- If the solution is different from a given answer, then the question paper is wrong
  - Where the candidate does not reach the answer given in the question, many continue with their solution in later parts of the question, losing more accuracy marks and often making it much more complex
- There is no need to reread the question to check that the solution answers the question
  - In a solution which requires multiple techniques, candidates often seem to complete the first process and then present the result as the final answer. Especially true for more able candidates who have practised a lot
- $f^{-1}$  always means the reciprocal
  - This is an example of where the same notation also means the inverse. Candidates should be aware of all the varieties of notation identified within the syllabus
- The answer can be in a different unit to the question
  - Most often in questions involving angles, many candidates assume that converting between radians and degrees will always be acceptable
- In Statistics 1, graphs can lack accuracy

- This is the only component for which graph paper is supplied. Scales need to be chosen sensibly so that points can be plotted accurately to give a visual representation of a set of data
- In Pure 1 or Pure 3, a sketch must be plotted
  - Here the focus is on communicating the important aspects of the graph, e.g. turning points, asymptotes, period, intercepts with the axes. It is not necessary and can be misleading to plot the graph from a set of points