

## STEP Exams - Tips (3 pages, 14/2/21)

See “STEP Exams – Preparation” and “STEP Exams – Technique” for further details.

(1) Specialise in certain topics.

(2) Target favourable questions:

- Questions with a clear topic and/or method (that you are happy with)
- ‘Show that ...’ questions
- Questions without curves to be sketched
- Short questions! (less time spent reading; especially if the question is not chosen)

(3) Look ahead in the question for inspiration.

(4) Often inspiration for a problem will only come after experimenting (including drawing a diagram); or an important feature of a problem will not become apparent until then.

(5) Try things that look useful and are quick to do (ie you can quickly establish whether they are leading anywhere).

Before embarking on a solution, consider how likely it is that it will work, and how much time it will take.

(6) Look out for shortcuts:

- adapting an earlier method or result
- invoking symmetry
- solutions by inspection

(7) Don't do anything that is too obscure: the correct approach, once found, is usually relatively 'simple'. Always consider the simplest possible interpretation of anything that is unclear about the question.

(8) Beware of not considering all cases, or not giving special treatment to certain cases (eg where there would otherwise be division by zero).

(9) Be careful not to show that  $B \Rightarrow A$  when  $A \Rightarrow B$  is required (where  $A$  and  $B$  are two results or statements).

It may however be possible to simply write  $A \Leftrightarrow \dots \Leftrightarrow B$ .

(10) Re-read the question at critical moments:

- Just before embarking on a solution.
- If you don't seem to be getting anywhere.
- When you think you have finished answering the question.

(11) Be careful to explain what you are doing and justify arguments fully. Ensure that the order of steps is clear, and where each step comes from.

(12) When writing your solution, read over each line before moving on to the next one.

(13) You might like to save a relatively straightforward task to complete in the last few minutes of the exam, rather than frantically looking through the paper for something to check.

(14) Whatever strategy you adopt, it is probably best to allow it to develop gradually over the course of the preparation period, so that by the time you come to the exam the strategy has been tested.