



(If you wish to write the answer directly...)

**PROBLEM 1**

Here lies the solution / proof.



(If you wish to state the problem and then write your answer...)

**PROBLEM 2** (Brief description)

You may also state the problem here...



Solution ... and write the solution here...



(If you prefer “Proof” instead of “Solution” ...)

Proof ... or a proof like this one...

**LEMMA 2.1** (You may write some description here)

Some auxiliary result.



*Proof.* The proof of **LEMMA 2.1**, where we use the following formula (note the use of `\qedhere`):

$$\infty = \infty + 1.$$



**FACT 2.2** (This statement requires no proof)

Use `\proofless` to change the hollow box marking the end of a theorem-type environment into a solid one.



... and the rest steps...



(You may also write answer instead of solution if you wish...)

Answer The usage of the answer environment is exactly the same as solution.



(If you prefer the classical proof style...)

*Proof.* The usual proof environment also works.



(If you wish to answer each sub-question of a problem separately...)

**PROBLEM 3** (A problem with many sub-questions)

1) First question.

Solution The solution of the first question.



2) Second question.

i) First sub-question.

Solution The solution of the first sub-question.



ii) Second sub-question.

Solution The solution of the second sub-question.



3) Third question.

Solution The solution of the third question.



Use `\noqed` (or `\noQED`) at the end to suppress the Q.E.D. symbol that marks the end of the current problem.

(If you wish to number the exercise manually...)

**EXERCISE A.1.1** (An exercise with custom numbering)

Use `\ManualNumbering` to manually set the numbering. This number will only be applied to the next specified environment.



**EXERCISE 4**

Back to normal numbering.



(If there is a question that you can't figure out how to solve at the moment...)

**To be finished #1: some description**

Below is a list of outstanding items, followed by the corresponding page numbers.

# 1 <2> : some description