Read John Lee's article on writing proofs (also posted on CCLE under Homework).

For the next part of the reading assignment it may help to have some context:

A group G is a set with a binary operation satisfying some nice properties. The set must be closed with respect to the operation, there is an identity element with respect to the operation, the operation is associative, and each element has an inverse. Groups are often studied in a course on abstract algebra.

Some examples include the integers with the operation addition $(\mathbb{Z}, +)$ where the identity is 0. We can also take the nonzero rationals with multiplication $(\mathbb{Q}^\times, \times)$. Here the identity is 1. However, the nonzero integers with multiplication would not have necessary multiplicative inverses.

A group G is abelian if the binary operation is commutative. The examples above are abelian. The group of invertible 2×2 matrices with matrix multiplication is not abelian, because order matters in matrix multiplication. A subgroup is a subset of a group that is closed under the operation. A cyclic group is generated by a single element. For example, in $(\mathbb{Z}, +)$ every element is of the form $n = 1 + \cdots + 1$ or its inverse $-n$, so this group is generated by 1. On the other hand $(\mathbb{Q}^\times, \times)$ is not cyclic.

With this in mind, read https://www.maa.org/node/121566. Then answer the following:

1. Does Lee suggest your proofs include formal writing, informal writing, or both?

2. Improve the following mathematical sentence by rewriting it:

   x is an integer > 7 and < 9, $\implies$ it is 8.

3. Choose one of the study skills questions for reading theorems or reading definitions and answer it for a theorem or definition from Section 2.6.

4. At this point you have read (and also written) many proofs. Describe one thing you appreciate in a well-written proof.

5. Describe one thing you dislike seeing in a proof.