Don't get hung up on one or two styles of sentences. The following sort of thing can become very monotonous:

Thus, ——-
Consequently, ——-
Therefore, ——-
And so, ——-

On the other hand, parallelism should be used when it is the point of the sentence.

Now the comments involving content:

Try to make sentences easily comprehensible from left to right. For example, "We prove that \langle grunt \rangle and \langle snort \rangle implies \langle blah \rangle." It would be better to write "We prove that the two conditions \langle grunt \rangle and \langle snort \rangle imply \langle blah \rangle." Otherwise it seems at first that \langle grunt \rangle and \langle snort \rangle are being proved.

While guidelines have been given for the use of the word 'that', the final placement must be dictated by cadence and clarity. Read your words aloud to yourself.

The word 'shall' seems to be a natural word for definitions to many mathematical readers, but it is considered formal by younger members of the audience.

Be precise in your wording. If you mean "not nonincreasing," don't say "increasing"; the former means that \( p_j < p_{j+1} \) for some \( j \), while the latter that \( p_j < p_{j+1} \) for all \( j \).

Avoid passive voice. (My temptation to write, "Passive voice is bad," was overwhelming.) For example, replace "It can be shown ..." by "A proof shows ...".

Mixed tenses on the same subject are awkward. For example, "We assume now \langle grunt \rangle, hoping to show a contradiction," is better than, "We assume now \langle grunt \rangle, and will show that this leads to a contradiction."

Many people used the ungainly phrase "Assume by contradiction that \langle blah \rangle." It is better to say, "The proof that \langle blah \rangle is by contradiction," and even better to say "To prove \langle grunt \rangle, let us assume the opposite and see what happens."

In general, a conversational tone giving signposts and clearly written transition paragraphs provides for pleasant reading. One especially easy-to-read proof contained the phrases "The operative word is zero," "The lemma is half proved," and "We divide the proof into two parts, first proving \langle blah \rangle and then proving \langle grunt \rangle."

You can give relations in two ways, either saying \( p_i < p_j \) or \( p_j > p_i \). The latter is for "people who are into dominance," Don says, but the former is much easier for a reader to visualize after you've just said \( p = (p_1, p_2, \ldots, p_n) \) and \( i < j \). Similarly, don't say '\( i < j \) and \( p_j < p_i \); keep \( i \) and \( j \) in the same relative position.