For (3.6) and (3.7) there is only one comment: (3.3) is used to compare the outer measure of the interior of an interval with the outer measure of the interval.

Please ignore ("delete") the paragraph containing (3.9), and all until: **2. Lebesgue Measurable Sets**.

Note that (3.11) defines Lebesgue measure in terms of outer measure. The paragraph after (3.11) and the examples are important to remember!

The technique for proving (3.12) is the same as that for proving (3.7). The proof of (3.13), though easy (now that we know the "Clearly," should be remembered.

We will eventually show that the conmplement of a measurable set is measurable. But because of the way "measurable set" has been defined, needing an estimate of the size of $|G \setminus E|_e$, we have to approach the proof slowly, and handle closed sets using facts about compact sets!

The proof of (3.16) contains another "Clearly," but this one is not so bad. First, tho, we set aside any I'_k that does not meet E_1, and set aside any I''_k that does not meet E_2. We know that no I'_k that we kept meets E_2, and no I''_k that we kept meets E_1. Thus no such I'_k or I''_k has to be "used twice!" We can now "put back" the I'_k and I''_k that we set aside. The equality in the displayed line uses (3.15).

The proof of (3.14) is deep. Be sure you note the main points! If you aren't sure you noted them, let me know what you *think* they are, and I'll comment!

I recommend that you "translate" the proof of (3.17) from "CE" form to "E^c" form, and remember De Morgan's laws.

(3.18) and (3.19) are now easy to prove.

Even tho this is just over one page, I think you'll be hard pressed to actually follow all the proofs mentioned here in 50 minutes!