Problem. Let A and B denote abstract sets. Prove that

$$A \cap B = B \text{ if and only if } B \subseteq A.$$

Proof. In order to prove $A \cap B = B$ if and only if $B \subseteq A$ we need to show (i) ... and (ii) ...

First we argue ... (i). This is the second paragraph of the proof. This would include the argument for (i). Thus we have shown ....

Now we argue (ii). This should be in its own paragraph. Notice that there is a blank line between this paragraph and the paragraph above. You should make a point to include this line space for better legibility of your proofs.

Since we have shown (i) and (ii) we have shown that $A \cap B = B$ if and only if $B \subseteq A$. *Alternatively we could end with:* This completes the proof.