MATHEMATICAL WRITING CHEAT SHEET

LOGICAL PROGRESSION AND REASONING

- Therefore, it follows that...
- Thus, we conclude that...
- Hence, we obtain...
- From this, it follows that...
- As a result, we deduce that...
- Consequently, we see that...
- Since C is always true, we must have...

IF-THEN STATEMENTS AND ASSUMPTIONS

- If X holds, then Y must also hold.
- Suppose that P is true; then we must have...
- Given that A is satisfied, it follows that...
- Assume that f(x) is differentiable; then we can write...
- Under these conditions, we can conclude that...

DEFINITIONS AND EXPLANATIONS

- We define f(x) as follows:
- The term "X" refers to...
- By definition, we have...
- Formally, a function is said to be continuous if...
- For the sake of clarity, we introduce the notation...

PROOFS AND JUSTIFICATIONS

- To prove this, we proceed as follows...
- We now establish the claim by induction.
- Consider the case where...
- By contradiction, suppose that...
- This result follows directly from Theorem X.
- Applying Lemma Y, we obtain...
- Using the assumption that..., we see that...

Comparisons and Contrasts

- Unlike the previous case, here we find that...
- This result is similar to... but differs in that...
- In contrast to..., we now observe that...
- A key distinction between these cases is that...
- While X holds in general, it does not necessarily imply Y.

EXAMPLE AND COUNTEREXAMPLE

- As an example, consider the function...
- For instance, if we take x = 2, then...
- A simple case to illustrate this is...
- However, the following counterexample shows that...
- To demonstrate that this condition is necessary, consider...

SUMMARIZING AND CONCLUDING

- In summary, we have shown that...
- To conclude, we have established that...
- This completes the proof of Theorem X.
- The main result can be summarized as follows...
- Overall, these findings demonstrate that...

TRANSITIONS BETWEEN STEPS

- Next, we consider the case where...
- Proceeding in a similar manner, we obtain...
- We now turn our attention to...
- Applying the previous result, we get...
- Rewriting the equation, we find that...