Study Guide for Chap 02

1. Find and memorize typical examples in which the limit does not exists, not continuous, not differentiable, etc. They will be very useful in resolving paradoxes about precise definition of limit.

2. Study Sandwich Theorem and applications. Practice on variants of $\lim\limits_{\theta \to 0} \dfrac{\sin \theta}{\theta}$.

3. Study the precise definitions on page 77, p84, p87, p93 and p104, etc. Find an example for each definition and verify with the $\varepsilon - \delta$ argument.

4. Study how to prove $\lim_{x \to c} f(x) = L$ using standard tricks such as the $\epsilon/2$ argument. Study how to disprove $\lim_{x \to c} f(x) = L$.

5. Study how the $\varepsilon - \delta$ argument can be used to examine statements like Example 6, 7 in section 2.3 and Theorem 10 in section 2.5.

6. Study Intermediate Value Theorem and its application.