Tentative Assignments - Chapter 3

Section  Exercises*

17  1, 3(adf), 4, 5, 7(b), 8(a), 9, 10, 12, 14; (11 & 15 - read only)
    (i) Use an $\varepsilon$-$\delta$ argument to show that $\lim_{x \to 5^-} x^2 = 25$.  Note: In class, we proved that
        $\lim_{x \to 5^+} x^2 = 25$.  Hint: If $1 \geq \varepsilon > 0$ we let
        $\delta = \sqrt{5^2 + \varepsilon} - 5$.  Now show that $5 - \delta < x < 5$
        implies that $|x^2 - 25| < \varepsilon$.  Here it is helpful to observe that
        $\delta < 5 - \sqrt{5^2 - \varepsilon}$.

18  1, 2(read only), 5, 6–8, 10

19  1(beg), 2(bc), 4, 5(c), 6–8, 12

12. Let $f$ be a continuous function on $[a,b]$. Show that the function $f^*$ defined by
    $f^*(x) = \sup\{f(y) : a \leq y \leq x\}$, for all $x \in [a,b]$, is an increasing continuous function on $[a,b]$.

20  2, 6, 16, 17 (read only)

23  1(ac), 2(d), 4, 9

* - Graded homework exercises will be selected from assigned problems and additional handouts to be distributed throughout the semester.