

Homework Assignment 1.

Assigned Sep 15, 2005

1. Section 2.2: problems 55, 72(a) (find the limit only). Chap 2: problems 41, 42.
2. Section 2.3: problems 24, 34, 40, 46. Chap 2: problems 37, 38, 39, 53,
3. State (need not prove) the ' $x \rightarrow c^+$ ' and ' $x \rightarrow \infty$ ' versions of the Sandwich Theorem.
4. (Challenge of the week, think carefully and enjoy) Let $f : (0, 1) \rightarrow \mathbb{R}$ be defined as

$$f(x) = \begin{cases} 1/p & \text{if } x = q/p, \quad p, q \in \mathbb{N}, \quad (p, q) = 1 \\ 0 & \text{otherwise} \end{cases}$$

For what values of $c \in (0, 1)$ is f continuous at c ?

5. Section 2.4: problems 54, 55, 56, 57. Chap 2: problems 69, 70.
6. Section 2.5: problems 41, 42. Chap 2: problems 74, 75.