

## Math 325 Problem Set 7

Due Wednesday, March 28

- 28.
29. [Lay, p.207, problem # 21.5] Find an example of a function  $f : \mathbb{R} \rightarrow \mathbb{R}$  that is continuous at  $x = 0$  but is discontinuous everywhere else.
30. [Lay, p., problem # ]
31. [Lay, p.214, problem # 22.7] Suppose that  $f : [a, b] \rightarrow [a, b]$  is continuous. Show that there is at least one  $c \in [a, b]$  with  $f(c) = c$  (such a  $c$  is called a fixed point of  $f$ ). [Hint: rewrite to the conclusion to say that that some (other) function takes a specific value. [Note: “c” isn't a ‘specific’ value...]] [Alternate hint: read the statement of problem # 22.8 ?]