Math 325 Problem Set 7

Due Wednesday, March 28

28.

29. [Lay, p.207, problem # 21.5] Find an example of a function $f : \mathbb{R} \to \mathbb{R}$ that is continuous at $x = 0$ but is discontinuous <u>everywhere</u> <u>else</u>.

30. [Lay, p., problem #]

31. [Lay, p.214, problem # 22.7] Suppose that $f : [a, b] \to [a, b]$ is continuous. Show that there is at least one $c \in [a, b]$ with $f(c) = c$ (such a c is called a <u>fixed</u> <u>point</u> of f). [Hint: rewrite to the conclusion to say that that some (other) function takes a specific value. [Note: "c" <u>isn't</u> a 'specific' value...]] [Alternate hint: read the statement of problem # 22.8 ?]