HOMEWORK 15

1) Define $f(x) = \left\{ \begin{array}{ll} 4 & : x \geq 2 \\ -x & : x < 2 \end{array} \right\}$
Prove f is not continuous at 2 using sequences.

2) Define $f(x) = \left\{ \begin{array}{ll} x^2 & : x > 1 \\ 1 - x & : x \leq 1 \end{array} \right\}$
Prove f is not continuous at 1 using sequences.

3) Define $f(x) = \left\{ \begin{array}{ll} x^3 & : x > 0 \\ -x & : x \leq 0 \end{array} \right\}$
Prove f is continuous on $\mathbb{R}$ using sequences.