Due Thursday, 17 February:

From page 322 of **BS**: 9, 10

From page 326 of **BS**: 4, 10

From page 155 of **BS**: 2, 3, 4,

A. REMOVED!

B. Suppose $f : \mathbb{R} \mapsto \mathbb{R}$ is a continuous function.
Show that $N = \{x \in \mathbb{R} : f(x) \neq 0\}$ is open in $\mathbb{R}$.

C. Let $f(x) = x^3 - x^2 + 3x - 1$ for x in the interval $I = [-2, 5]$.
    (a) Find the set of values of f, that is, find $f(I) = \{y \in \mathbb{R} : y = f(x) \text{ for } x \in I\}$.
    (b) Prove that there is a continuous function g defined on $f(I)$ so that $g(f(x)) = x$ for x in I and $f(g(y)) = y$ for y in $f(I)$.