MATHEMATICS FOR ECONOMICS

PROBLEM SET 10

The problems came from Simon and Blume (1994).

Chapter 21: 18, 21, 22, 23, 25

In addition, you are asked to answer the following open question in Note 10

1. Show that the functions $3z+2$, z^4 and $\ln z$ are monotonic transformations of $\mathbb{R}_{++}$.
2. Prove Theorem 4.
3. Prove Theorem 8.
4. Suppose $h(x) = x^3 + x$ and $g(x) = -2x$, both with domains $\mathbb{R}$. Show that $h(x)$ and $g(x)$ are both quasiconcave, while $h(x) + g(x)$ is not.