Individual Demand. Part 1

1. A consumer in a two-good economy has a demand function $x(p, w)$ that satisfies Walras's law. His demand function for the firrst good is $x_1(p, w) = \alpha w/p_1$ with $\alpha \in (0, 1)$. Derive his demand function for the second good. Is his demand function homogeneous of degree zero?

2. Take the utility function $u(x_1, x_2) = -(x_1 - x_2)^q$ for $x_1, x_2 \geq 0$ with $q > 0$ being an even number

(a) Explain whether the underlying preferences satisfy weak monotonicity and/or local-nonsatiation? A graph may help.

(b) Is it true that the Walrasian demand $x(p, w)$ from the above could also come from Leontief-Preferences $U(x_1, x_2) = min\{x_1, x_2\}$?

3. Solve problem 2.F.16 a) and b) in MWG.

Recommended Exercises. (No need to hand in)

4. Exercise 3.D.5 in MWG.

5. In the Mathematical Appendix of MWG: read Chapter M.H. Try to construct corre-

spondences which are not upper hemi-continous.