SOLUTIONS: QUIZ I ECON500, October 4, 2006

Name:

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Write your answer in the boxes below or mark the correct box.
Only the answer in the box counts.
Use the back of this form and the last page as scratch paper—do not use your own paper.

Question 1 Suppose a utility function is given by $u(x_1, x_2) = x_1 + \ln(x_1 + x_2)$. Prices are given by $p_1 = 10, p_2 = 1$. Graph the wealth expansion path in the grid below (*To get credit, the graph must be accurate*).

The MRS is given by MRS $= x_1 + x_2 + 1$. Thus, if the solution is interior we get $x_1 + x_2 + 1 = 10$, i.e., $x_1 + x_2 = 9$. If wealth is too low, we get a boundary solution where $x_1 = 0$. If wealth is sufficiently large than $x_2 = 0$.

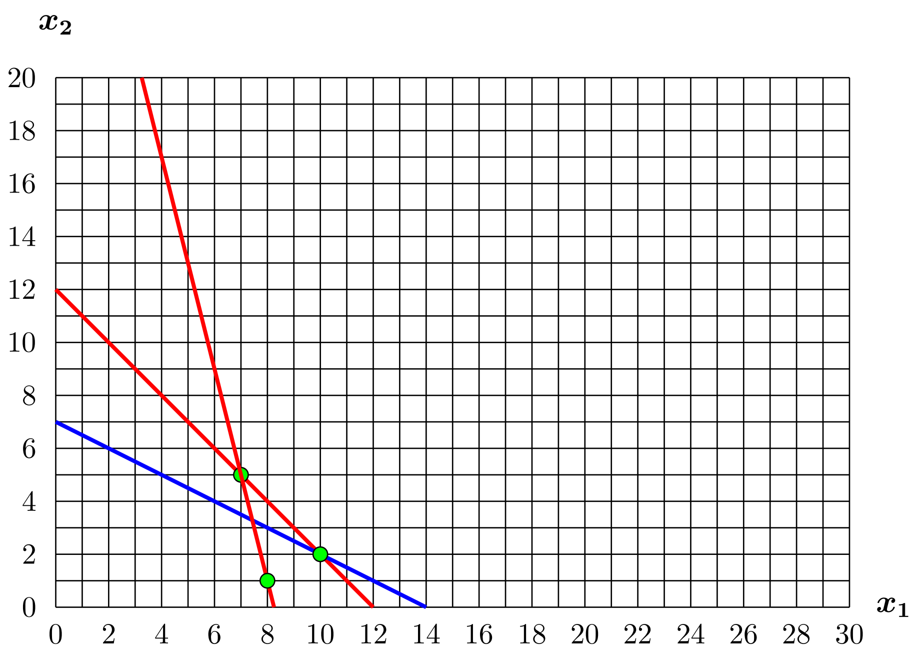
Question 2 Below is a list of a consumer's choices given a Walrasian Budget Set.

- If prices are $p^1 = (1, 1)$ then the consumer chooses $x^1 = (7, 5)$,
- If prices are $p^2 = (1, 2)$ then the consumer chooses $x^2 = (10, 2)$,
- If prices are $p^3 = (1, 4)$ then the consumer chooses $x^3 = (8, y)$,

The the weak Axiom is violated if and only if $1 \leq y \leq 4$.

$\boldsymbol{y \in [1, 4]}$ 2%

The grid below may help



Question 3 Let $x(p,w)$ be the Walrasian demand function of a consumer. Assume that at $(\bar{p},\bar{w})$,

$$\frac{\partial x_1(\bar{p},\bar{w})}{\partial p_1} = -3, \text{ and } \frac{\partial x_1(\bar{p},\bar{w})}{\partial w} = -1.$$

Let $w = w(p)$, and assume that when p_1 changes, wealth $w(p)$ is adjusted such that the demand for commodity 1 does not change.

Then $\boldsymbol{\frac{\partial w(\bar{p})}{\partial p_1}} =$ (the answer must be a number!)

2%

Scratch paper: Anything on this page will not be graded.