Corrected Question 2

Related to Starr’s *General Equilibrium Theory*, problem 7.9. Consider a two-person, two-commodity pure exchange economy, an Edgeworth Box, with $X^i \equiv R^2_+$ for both households. Households are named $i = 1, 2$. Assume axioms C.I - C.V, C.VII, C.VIII. This is an economy without active production so assume $\mathcal{Y}^j \equiv \{0\}$ (the set whose only element is the zero vector) for all $j \in F$. Note that this specification of $\mathcal{Y}^j$ trivially fulfills P.II, P.III, P.V, P.VI.

Recall Theorem 7.1: Assume P.II, P.III, P.V, P.VI, C.I–C.V, C.VII, and C.VIII. There is $p^* \in P$ so that $p^*$ is an equilibrium.

- Demonstrate that the Edgeworth Box has a competitive equilibrium price vector, $p^*$. Hint: Check that Theorem 7.1 applies. If so, then check that $p^*$ clears the Edgeworth Box. That is, show that
  $$(\tilde{D}^1(p^*) - r^1) + (\tilde{D}^2(p^*) - r^2) = \tilde{D}^1(p^*) + \tilde{D}^2(p^*) - r = 0 \text{ (the zero vector)}$$
  or
  $$(\tilde{D}^1(p^*) - r^1) + (\tilde{D}^2(p^*) - r^2) = \tilde{D}^1(p^*) + \tilde{D}^2(p^*) - r \leq 0 \text{ (the zero vector; the inequality applies co-ordinatewise)}$$
  with $p^*_k = 0$ for a good $k = 1, 2$, where the strict inequality holds.