Math 414/514
Fall 2009

1.6

2b. S bounded $\Rightarrow \overline{S}$ compact
$\Rightarrow f(\overline{S})$ compact
$\Rightarrow f(S) \subset f(\overline{S})$ bounded

1.7

10. $f(1,3) = -2$ $f(4,-1) = 5$ (for $f = x - y$)
So there is a point $(x,y) \in S$ for which
$f(x,y) = 0 \Rightarrow x - y = 0$
$x = y$