

A Comment on HW2, by Clovis Hamel

The marked questions from HW2 are 4 on page 92 and 4 on page 100, each for 10 points.

The challenge problem is worth up to 5 extra points.

**Reminder:** homework assignments must be stapled before submission.

**Comment on the product topology:** the general form of an arbitrary open set in the product topology  $X \times Y$  is not  $U \times V$  where  $U$  and  $V$  are open in  $X$  and  $Y$ , respectively. Such  $U \times V$  is an element of the basis for the product topology. To improve your understanding of the product topology, try to find an open set in  $\mathbb{R}^2$  that is not of the form  $U \times V$  for  $U, V$  open subsets of  $\mathbb{R}$ .