Directions. Please submit your answer to the following problem in a LaTeX-prepared document. Class participants are encouraged to prepare solutions in a collaborative mode but to prepare their to-be-submitted write-ups individually. The consequences of sharing files, electronic or otherwise, are discussed in the course syllabus.\footnote{If the wording of this problem was discussed in detail in the classroom, the course instructor expects to see similar phrases and sentences in reading the submissions.}

Please include the problem number along with a statement of the problem in your submission. Please also include your e-mail address.

**Problem.** Let 1 denote the multiplicative identity in a field, $\mathcal{F}$. Prove that

$$(-x) = (-1)x, \quad \forall x \in \mathcal{F}.$$ 

(The additive inverse of $x$ is $x$ times the additive inverse of the multiplicative identity.) (It may be convenient to use the identity $0x = 0$.)