

A NOTE ON CERTAIN MAPS BETWEEN ORDERED FIELDS

IVICA GUSIĆ

FACULTY OF CHEMICAL ENGINEERING AND TECHNOLOGY, UNIVERSITY OF ZAGREB, CROATIA

ABSTRACT. We characterize maps f between ordered fields satisfying one of the following four sets of conditions for all x, y :

(A) $f(xy) = f(x)f(y)$, and $f(x + y) \leq f(x) + f(y)$,

(B1) $f(xy) = f(x)f(y)$, and $f(x + y) \geq f(x) + f(y)$,

(B2) $f(xy) \leq f(x)f(y)$, and $f(x + y) = f(x) + f(y)$,

(B3) $f(xy) \geq f(x)f(y)$, and $f(x + y) = f(x) + f(y)$.

(C) $f(xy) \geq f(x)f(y)$, and $f(x + y) \geq f(x) + f(y)$.

Also we post a problem.