Problem of the Week
Problem E
Diagonal Distance

Square $ABCD$ has K on BC, L on DC, M on AD, and N on AB such that $KLMN$ forms a rectangle, $\triangle AMN$ and $\triangle LKC$ are congruent isosceles triangles, and also $\triangle MDL$ and $\triangle BNK$ are congruent isosceles triangles. If the total area of the four triangles is 50 cm^2, what is the length of MK?