(1) Perform (or imagine!) the following construction on a square sheet of paper:
Fold the paper in half, side to side. Note where your fold meets two sides
of the paper, and mark these points $P$ and $Q$. (We will call this fold an
*auxiliary fold.*) Now make two new folds, both passing through $P$ and each
passing through one of the vertices of the opposite side. We will call these
our *main folds.* Do this again for each side of the paper, making a total of
8 main folds.
(a) Find a famous right triangle using the 8 main folds. (Ignore the aux-
iliary folds.)
(b) Why does this work?
(c) (⋆) What else is interesting about the arrangement you have con-
structed?