Exercise 7.2:

If one assumes in figure 7.8 that the polygons are triangles, it is necessary to project the polygons and apply the odd parity rule afterwards in order to determine whether the intersection point lies within the triangle. Describe an algorithm for triangles without using projections.

Solution (sketch):
The intersection point can be represented as a linear combination of the three vertices of the triangle such that the three coefficients sum up to one. The intersections point lies within the triangle if and only if the three coefficients are between 0 and 1.