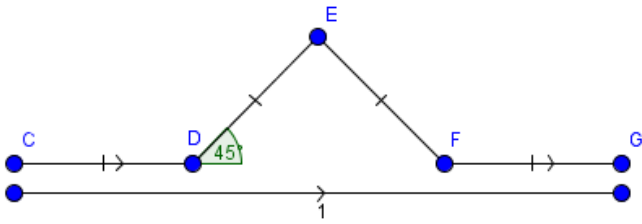


## Problem 43

$CD = DE = EF = FG$  and  $\overline{CD}, \overline{FG}$  are parallel to the given line of length 1. Find  $CD$



# Answer

$$\frac{2 - \sqrt{2}}{2}$$

# Explanation

Constructing DF makes a  $45-45-90$  triangle. So  $CD+DF+FG = x + x\sqrt{2} + x = 1 \rightarrow x = \frac{1}{2+\sqrt{2}}$