

Due to highly symmetric nature of the given circuit, it can be broken along the diagonal.

(currents through the two circuits remain unaffected which can be confirmed by distribution of currents in the branches - similar situations happen in each branch)

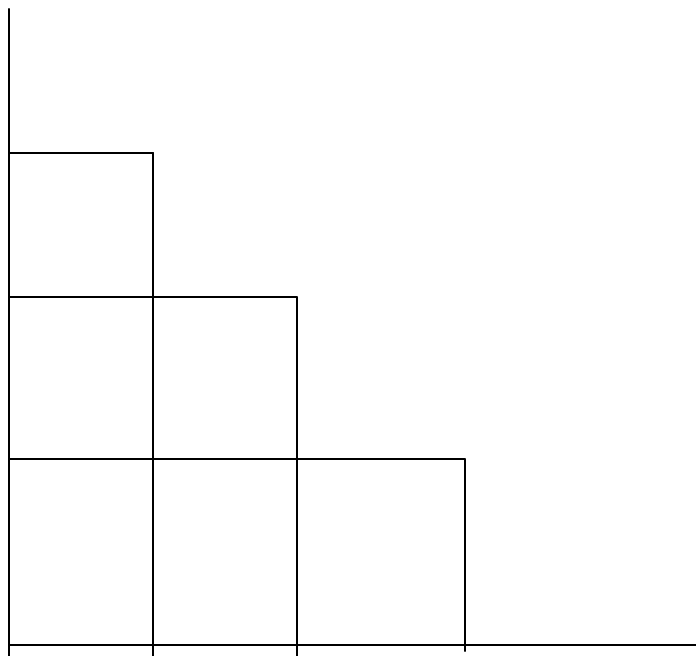


Figure1

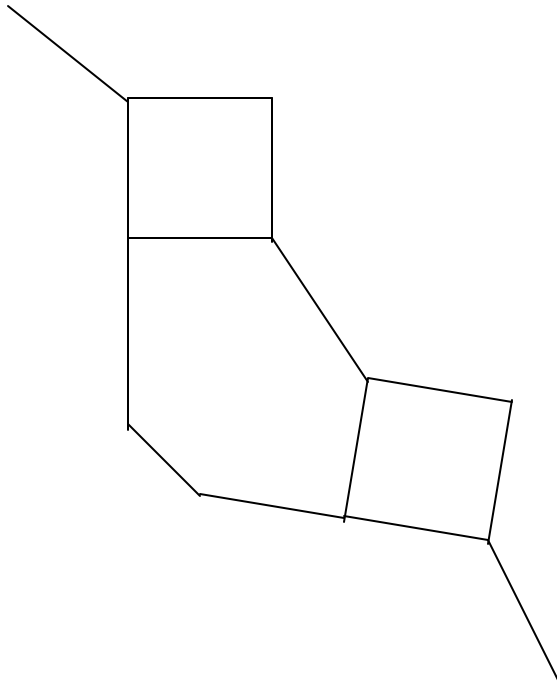


Figure2

So by distribution of currents into different branches symmetry etc we get the equivalent resistance of each branch,

$$R_{eq} = (47/11) R$$

(original grid is equivalent to these two branches in parallel)

$$\begin{aligned} \text{Hence the equivalent resistance of the given mesh} &= R_{eq} / 2 \\ &= (47/22) R \end{aligned}$$