Answer on Question #81726, Physics Electric Circuits

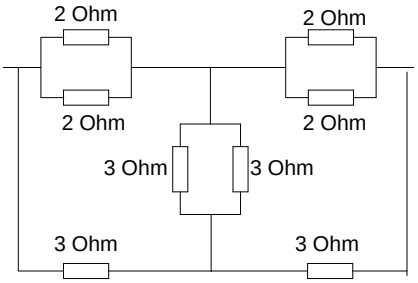
The edges of a square pyramid are made out of wires which are conductively connected at all vertices. Compute the resistance across the opposite vertices on a diagonal of the base square, given that the resistance of one meter of the wire is 1Ω, the height of the pyramid is √7 m and the base length is 2m.

Solution

1/2 the diagonal of the square is: $\frac{\sqrt{8}}{2}$

Side a square pyramid: $x = \sqrt{(\frac{\sqrt{8}}{2})^2 + \sqrt{7}^2} = 3\ metres = 3\ Ohm$

Convert the schema:



Total resistance of this circuit R=1.5 Ohm

Answer: R=1.5 Ohm