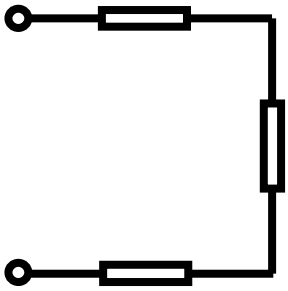
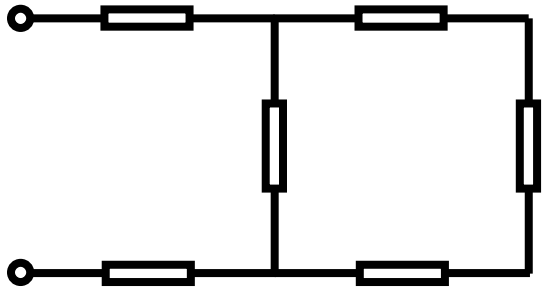
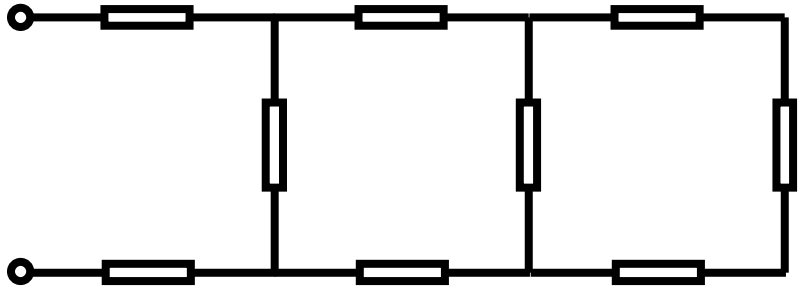
Combining resistors: extension question



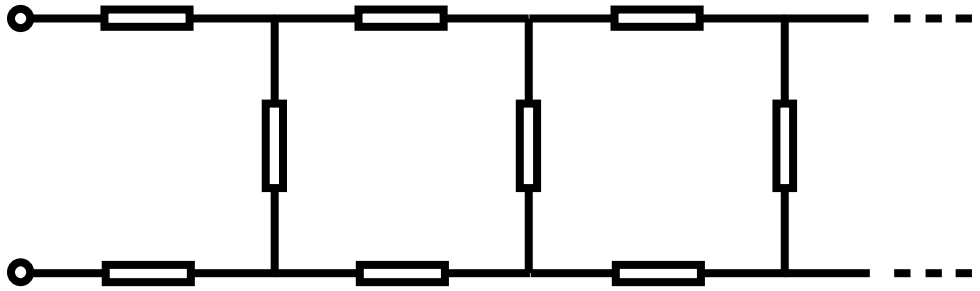
If each of the resistors in this network has a resistance R, the resistance of the network above is $3R$



If each of the resistors in this network has a resistance R, the resistance of the network above is $2R + \left(\frac{1}{R} + \frac{1}{3R}\right)^{-1}$



If each of the resistors in this network has a resistance R, the resistance of the network above is $2R + \left(\frac{1}{R} + \frac{1}{2R + \left(\frac{1}{R} + \frac{1}{3R}\right)^{-1}}\right)^{-1}$



If the network of resistors repeats like this with an infinite number of additional branches;

a) write an expression for the resistance of the network, Q, in terms of R,

b) calculate what the resistance would be if R was equal to 1 Ω, and 2 Ω.