EXERCISE:

The instructions for an electric hedge clipper suggest that a 20-gauge cord with a cross-sectional area of 5.2 x 10-7m2 extension cord can be used for distances up to 35m, but a thicker 16-gauge with a cross sectional area of 13 x 10-7m2 cord should be used for longer distances, to keep the resistance of the wire as small as possible.

Since 70m is twice as long as 35m, the resistance at 70m is double the resistance at 35m. This is based on the fact that the longer the length, the more is the probability of collisions, therefore larger the resistance.

3. Determine the resistance of 16-gauge copper wire with a length of 35m.

R16 = ρCu = = 0.46 Ω

4. Determine the resistance of 16-gauge copper wire with a length of 35m, but with an area of 13 x 10-7m2.

R16 = ρCu = = 0.46 Ω

How do the two resistances compare?

They are equal because the length (35m) is the same and so is the diameter of the copper since they belong to the same 16-gauge. NEED MORE EXPLANATION AS TO THE WHY BEHIND IT. Like a principle or concept

thanks