8. Given that rho for copper is $1.724 \times 10^{-8}$ ohms-meter, how much resistance does 100 ft of 14 AWG copper wire have?

Do a web search to find out what 14 AWG means.

14 AWG has a diameter of 0.064084 inches

$$R = \frac{L \cdot \rho}{A}$$

where $L$ is in meters (length)
A is in square meters (cross sectional area)
$\rho$ is in ohms-meter

$100$ ft = 30.48 meters

$$A = \pi r^2$$

$r = 0.032042$ inches $= 0.0008138468$ meters

$$A = \pi r^2 = \pi (0.0008138468)^2 \approx 0.000002079871$$

$$R = \frac{30.48 \cdot 1.724 \times 10^{-8}}{0.000002079871} = \frac{0.00005254752}{0.000002079871}$$

$\approx 0.25352$