

32 A power supply is connected to a component by connecting wires of total resistance $4.9\ \Omega$.

The power supply has an output power of $3.6\ \text{W}$ and a terminal potential difference of $12\ \text{V}$.

How much thermal energy is dissipated in the connecting wires in a time of $1.0\ \text{hour}$?

A $0.44\ \text{J}$

B $29\ \text{J}$

C $1.6\ \text{kJ}$

D $11\ \text{kJ}$