

- 36** The wire of a heating element has resistance R . The wire breaks and is replaced by a different wire.

Data for the original wire and for the replacement wire are shown in the table.

	length	diameter	resistivity of metal
original wire	l	d	ρ
replacement wire	l	$2d$	2ρ

What is the resistance of the replacement wire?

A $\frac{R}{4}$

B $\frac{R}{2}$

C R

D $2R$