

34 A power cable X has resistance R and carries current I .

A second cable Y has resistance $2R$ and carries current $\frac{1}{2}I$.

What is the ratio $\frac{\text{power dissipated in Y}}{\text{power dissipated in X}}$?

A $\frac{1}{4}$

B $\frac{1}{2}$

C 2

D 4

Space for working