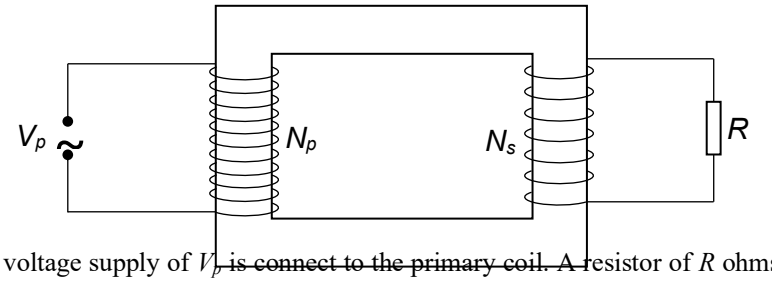
25 The figure below shows an ideal transformer with N_p turns in its primary coil and N_s turns in its secondary coil.



An alternating voltage supply of V_p is connect to the primary coil. A resistor of R ohms is connected to the secondary coil.

Which expression gives the power in the primary coil?

A $\frac{N_p^2 V_p}{N_s^2 R}$ **B** $\frac{N_s V_p^2}{N_P R}$ **C** $\frac{N_s^2 V_p^2}{N_P^2 R}$ **D** $\frac{N_s^2 V_p}{N_P^2 R}$