7 Helium gas in a closed cylinder is heated until the pressure exerted by the helium is four times the original pressure. The volume occupied by the helium stays constant.

The mean square speed of the helium molecules before heating is $\langle v_I^2 \rangle$. The mean square speed of the helium molecules after heating is $\langle v_F^2 \rangle$.

What is the ratio $\dfrac{\langle v_F^2 \rangle}{\langle v_I^2 \rangle}$?

☒ **A** 1

☒ **B** 2

☒ **C** 4

☒ **D** 8

(Total for Question 7 = 1 mark)