8 The acceleration of free fall at the surface of the Earth is $9.81\,\text{m s}^{-2}$.
The mass of the Earth is M and the diameter of the Earth is D.

Which of the following gives the acceleration of free fall, in m s^{-2}, at the surface of a planet with diameter $\frac{D}{2}$ and mass $\frac{M}{9}$?

☒ **A** $\frac{9.81 \times 2}{9}$

☒ **B** $\frac{9.81 \times 4}{9}$

☒ **C** $\frac{9.81 \times 2}{3}$

☒ **D** $\frac{9.81 \times 9}{4}$

(Total for Question 8 = 1 mark)