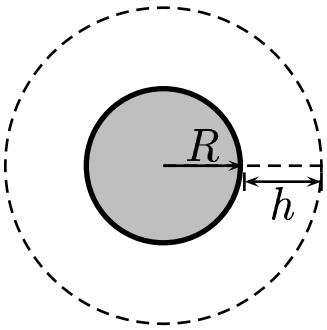

Express the gravitational acceleration at an altitude $h = R$, where R is the radius of the earth, in terms of the gravitational acceleration at the surface of the earth, g.

A) $g_{(r=2\,R)} = g$.

B) $g_{(r=2\,R)} = \dfrac{g}{2}$.

C) $g_{(r=2\,R)} = \dfrac{g}{3}$.

D) $g_{(r=2\,R)} = \dfrac{g}{4}$.

$$g = \frac{G\,M}{r^2}\,,$$

$$g\,(\,r = 2\,R\,) = \frac{G\,M}{(\,2\,R\,)^2} = \frac{g}{4}\,.$$

Answer **D**

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