The earth has a radius of about 6000 km. At what altitude is the acceleration due to gravity about ¼ that of g (acceleration due to gravity at the surface of the Earth = 9.8 m/s^2)?

A. 1000 km
B. 3000 km
✔ C. 6000 km
D. 8000 km
E. 10,000 km

$$g = G\frac{M_E}{r^2}$$

$M_E = 5.9736 \times 10^{24}$ kg

$G = 6.673 \times 10^{-11}$ N m² /kg²

The earth has a radius of about 6000 km. At what altitude is the acceleration due to gravity about 1/3 that of g (acceleration due to gravity at the surface of the Earth = 9.8 m/s^2)?

A. 1000 km
B. 3000 km
✔ C. 4500 km
D. 8000 km
E. 10,000 km

$$g = G\frac{M_E}{r^2}$$

$M_E = 5.9736 \times 10^{24}$ kg

$G = 6.673 \times 10^{-11}$ N m² /kg²