

7 Given that the mass of Earth is 5.97×10^{24} kg, what is the speed of a satellite in a geostationary orbit about Earth?

A $1.66 \times 10^3 \text{ m s}^{-1}$

B $3.07 \times 10^3 \text{ m s}^{-1}$

C $2.00 \times 10^7 \text{ m s}^{-1}$

D $4.22 \times 10^7 \text{ m s}^{-1}$