Consider a satellite moving near the Earth surface, the radius of its orbit \( r \) is approximately the radius of the Earth \( R \).

The period \( T \) of the satellite is

A) \( T = 2\pi \sqrt{\frac{R}{g}} \).

B) \( T = \sqrt{\frac{g}{R}} \).

C) \( T = 2\pi \sqrt{\frac{g}{R}} \).

D) \( T = \sqrt{\frac{R}{g}} \).
\[ g = \omega^2 R, \quad \text{so} \]
\[ \omega = \sqrt{\frac{g}{R}}, \quad \text{and} \]
\[ T = \frac{2\pi}{\omega}, \quad \text{so} \]
\[ = 2\pi \sqrt{\frac{R}{g}}. \]

\textbf{Answer A.}