



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) $T = \sqrt{\frac{R}{g}}$.

$$g = \omega^2 R, \quad \text{so}$$

$$\omega = \sqrt{\frac{g}{R}}, \quad \text{and}$$

$$T = \frac{2\pi}{\omega}, \quad \text{so}$$

$$= 2\pi \sqrt{\frac{R}{g}}.$$

Answer **A**.