

6 On the Earth, an object takes time T_E to fall from rest through a vertical distance h .

On the Moon, the same object takes time T_M to fall from rest through the same vertical distance h .

The ratio $\frac{\text{acceleration of free fall on the Earth}}{\text{acceleration of free fall on the Moon}}$ is equal to 6.

Air resistance is negligible for the object on the Earth and on the Moon.

What is the ratio $\frac{T_E}{T_M}$?

A $\frac{1}{6}$

B $\frac{1}{\sqrt{6}}$

C $\sqrt{6}$

D 6