

Answer on Question #42251, Physics, Mechanics | Kinematics | Dynamics

A man standing at the peak of Mount Everest tries to jump the 8,820m high mountain. If he screams at the time of his jump, how long is he screaming until he lands on the foot of the mountain? [Assume acceleration due to gravity= 10.0 m/s^2 and neglect friction.]

Solution:

Given:

$$h = 8820 \text{ m,}$$

$$g = 10.0 \text{ m/s}^2$$

$$t = ?$$

An object in free fall experiences an acceleration g .

The kinetic equation is

$$h = \frac{1}{2}gt^2$$

Thus, time of his jump is

$$t = \sqrt{2gh}$$

$$t = \sqrt{2 \cdot 10 \cdot 8820} = 420 \text{ s}$$

Answer. $t = 420 \text{ s}$.