

20080228-1444

A stationary 100.0 Newton object is suspended 8.000 m above the surface of the Earth by a steel wire of diameter 0.002000 meters. How much tension is in the wire?

Solution:

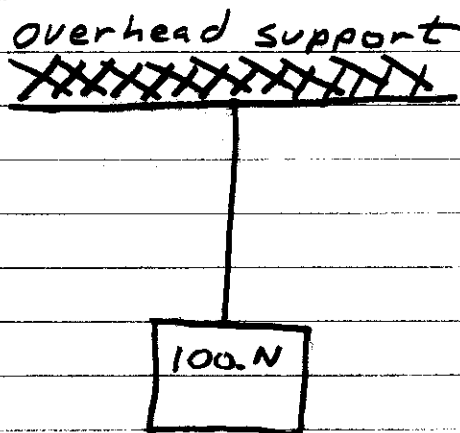
The wire only has to support the weight of the object since there is no acceleration.

We know the acceleration is zero because the object is stationary.

The tension is simply the weight of the object, which we were given.

$$\text{Tension} = F_w = 100.0 \text{ N}$$

Diagram



Note: Here we did not even need to know the mass in kilograms.