"The distances traversed, during equal intervals of time, by a body falling from rest, stand to one another in the same ratio as the odd numbers beginning with unity [namely 1; 3; 5;7 ......]" prove it.

Answer

The distance traversed in nth second by a freely falling body is given by:

$$s_n = 0 + \frac{8}{2}(2n - 1) \text{ (initial velocity} = 0)$$

$$\Rightarrow s = \frac{8}{2}(2n - 1)$$

So s is directly proportional to $(2n - 1)$ where $n = 1, 2, 3....$

So in consecutive seconds of 1s, 2s, 3s and so on

Distance will vary as: $1m, (2 \times 2 - 1)m, (2 \times 3 - 1)m$ and so on

So s varies as: $1m, 3m, 5m, ...$ (Proved).