

Chapter 03

MOTION IN A STRAIGHT LINE

Example- 3:

A drunkard walking in a narrow lane takes 5 steps forward and 3 steps backwards, followed again by 5 steps forward and 3 steps backward, and so on. Each step is 1 m long and requires 1 sec. How long the drunkard takes to fall in a pit 13 m away from the start?

Solution:

Distance of the pit from the start = $13 - 5 = 8$ m.

Time taken to move first 5m = 5 sec.

5 steps(i.e., 5m) forward and 3 steps (i.e., 3m) backward means that net distance moved = $5 - 3 = 2$ m.

And time taken during this process = $5 + 3 = 8$ sec.

$\therefore$ Time taken in moving 8m = $\frac{8 \times 8}{2} = 32$ sec.