

## Problem 3

Bob walks in a very unusual fashion; for every 3 steps forward, he then takes 2 steps back. Each step is exactly 1 ft long and takes him exactly 1 s to make. He starts just before the starting-line of a race, and the distance between the starting-line and finish-line is exactly 100 ft. How many seconds does it take him to complete the race (Step over the finish-line).

# Answer

493

## Explanation

It takes 5 seconds to complete 1 cycle. Each cycle results in a net change of 1 ft.

Considering he is just before the starting-line and he needs to step over the finish-line, he needs to step 101 ft.

To step 98 ft and be at the end of a cycle, it would take  $(98)(5) = 490$  s

It then takes an additional 3 s to step the remaining 3 ft.