

MATH 115 Session #19

Suppose an object falls from a height approximately in a manner summarized in the table below.

Time Interval	Ave. Velocity During Time Interval	Distance Traveled During Time Interval	Total Distance Traveled from 0 s to End of Time Interval
0 - 1 s	5 m/s	5 m	5 m
1 - 2 s	15 m/s	15 m	20 m
2 - 3	25 m/s	25 m	45 m
3 - 4 s	35 m/s	35 m	80 m

Suppose we let

$s(t)$  = distance the object has fallen at the end of  $t$  seconds.

Describe  $s(t)$  as a function of  $t$  using (a) a functional equation, and (b) a difference equation.