Course Code: ESC106A
Course Title: Construction Materials and Engineering Mechanics

Lecture No. 56
Numerical on Rectilinear Motion

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Lecture Intended Learning Outcomes

At the end of this lecture, student will be able to:

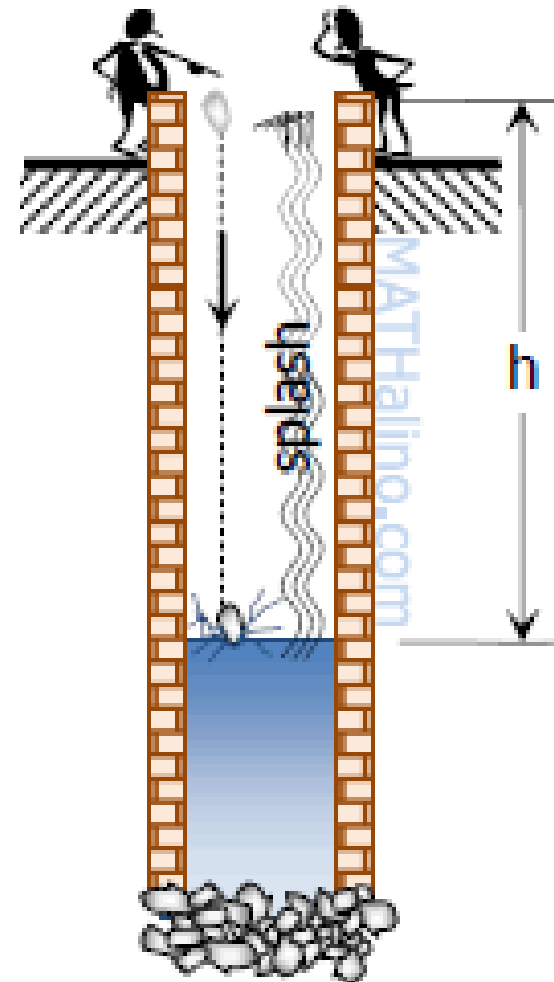• Solve problems on rectilinear motion

Contents

- Numerical problems on rectilinear motion

Rectilinear motion: Problem 1

A stone is dropped down a well and 5 sec later, the sounds of the splash is heard. If the velocity of sound is 341.376 m/s, what is the depth of the well?
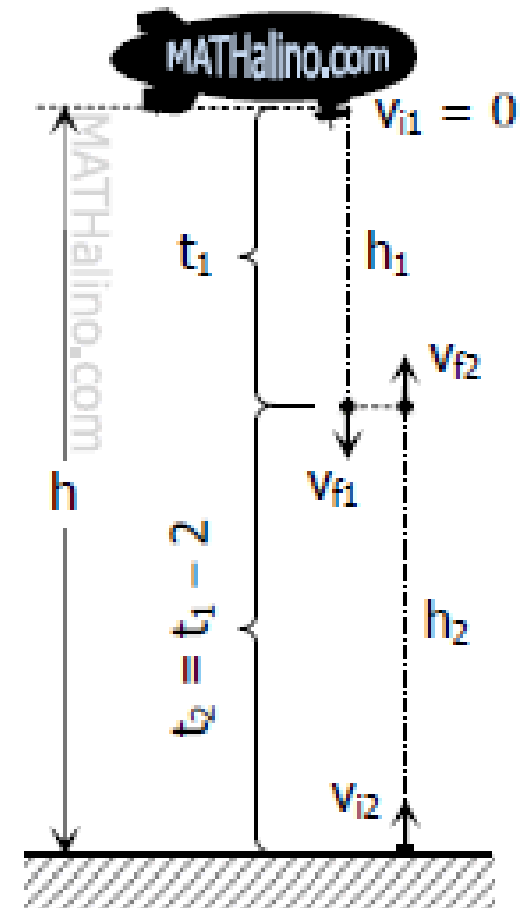

Ans: h=27065.05 and 107.64m

Rectilinear motion: Problem 2

A stone is dropped from a capti ve balloon at an elevation of 30 4.8 m. Two seconds later another stone is thrown vertically upward from the ground with a velocity of 75.6 m/s. If g = 9.75 m/s^2, w hen and where the stones pass each other?

Ans: h=182.925m

Rectilinear motion: Problem 3

A stone is thrown vertically upward from the ground with a velocity of 14.72 m/s). One second later another stone is thrown vertically upward with a velocity of 29.44 m/s . How far above the ground will the stones be at the same level?

Ans: h=10.994m

Summary

- A particle is said to be in linear motion, if the path traced by it is a straight line

- Displacement-Time curve is a curve with time as abscissa and displacement as ordinate