

Freely falling bodies from different heights

(reaching ground simultaneously)

Questions

1. When dropped from different heights, do both the bodies reach the ground with same velocities?
2. What is the velocity of B at the instant A reaches the ground?
3. For what difference between the heights is the *TOD* of A double the *TOD* of B?
4. For what difference between the heights is the final of A double the final velocity of B?
5. What is the relative velocity of A w.r.t. B before A crosses B?
6. What is the relative velocity of A w.r.t. B when both are in motion?
7. What is the relative velocity A w.r.t. B after A reaches the ground?
8. Plot a graph of Δt i.e. ($TOD_A - TOD_B$) as a function of ($H_A - H_B$).
9. Does Δt , mentioned above, depend only of ΔH i.e. ($H_A - H_B$) or does it depend of the value of H_A ?

Note :

Questions given above may be visualized and answered using the simulations. Obtaining a mathematical solution is to be always treated as the final answer because such a mathematical solution implies that one is able to understand and apply the concept.

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