



Overview

In this lab exercise, you will use the properties of free fall to measure your reaction time.

Procedure

Work in pairs. Partner A should hold a meterstick vertically at chest height and at the 80 cm mark. Person B then places his/her thumb and forefinger around the meterstick at a known location (say, 10 cm), so as to be able to grab the meterstick. Person A releases the meterstick without warning and B catches it between forefinger and thumb. The distance the meterstick falls can be used to find person B's reaction time.



Each person should practice 4 or 5 times, then conduct 10 trials. After that, A and B should switch roles.

Theory

On the back of this sheet, show how you can use the distance Δy something falls (from rest in free fall) to deduce how long it was falling. Your answer should be an equation for t in terms of Δy and g .

Data

Record only your data (not your partner's). Use $g = 9.8 \text{ m/s}^2$.

trial	distance fallen (m)	reaction time (s)	trial	distance fallen (m)	reaction time (s)
1			6		
2			7		
3			8		
4			9		
5			10		

Your height (in centimeters):		Your height (in centimeters):	
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Analysis

mean reaction time \bar{t}		error bar σ_t	
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