

Incline Motion

Introduction

It is known that a small ball rolling without slipping is approximately the same motion as the same ball sliding on a surface without friction. Using this knowledge we will investigate the motion of an object going down an incline.

Equipment List

Power Macintosh or Windows PC	Photogates
Vernier Logger Pro	Ramp
Ruler	Books
Ball	

Experimental Procedure

1. Measure the distance the ball will travel (the track length) and the height of track
2. Using the software record the final velocity of the ball
3. Repeat this for the various different inclinations (# of books used)
4. Calculate the acceleration for each case
5. Use these acceleration values to calculate the angles of inclination

Results

Number of books	Data using ball				
	Height of books, h (m)	Length of incline, x (m)	Final Velocity (m/s ²)	acceleration (m/s ²)	$\sin(\theta)$
1					
2					
3					
4					
5					

