

### Worksheet 3: 1D Kinematics (Part 2: Air Track)

Name: \_\_\_\_\_

Due September 25, 2024

Partner: \_\_\_\_\_

Pencil only: use of Pen is forbidden.

Diagram of apparatus used to compute  $\theta$

Measurements & Calculations		
Parameter	Unit	Measured Value
$d$ (air track "foot to foot")		$\pm$
$h$ (height of wood block)		$\pm$
Video Frame $\Delta t$		$\pm$
Video Frame Rate		$\pm$
Angle of Inclination ( $\theta$ )		
Expected Acceleration ( $g \sin \theta$ )		$\pm$

Calculations		
$(y = c_1 t^2 + c_2 t + c_3)$		
$(v = c_4 t + c_5)$		
Parameter	Unit	Result
$c_1$		$\pm$
$c_4$		$\pm$
$a$ from position plot		$\pm$
$a$ from velocity plot		$\pm$

*Discuss:*

Discuss the quality and level of agreement of your three acceleration values.

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