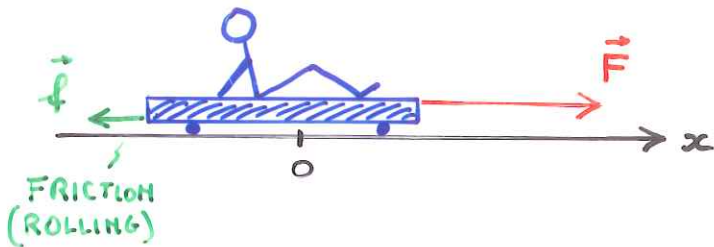


NEWTON'S SECOND LAW

$$\Sigma \vec{F} = m \vec{a} \quad \longrightarrow \quad \begin{cases} \Sigma F_x = m a_x \\ \Sigma F_y = m a_y \end{cases}$$



$$m = m_{\text{PERSON}} + m_{\text{CART}} \quad (\text{Kg})$$

* KEEP \vec{F} CONSTANT (RANGE 20N-40N)

- DO TRIAL RUNS

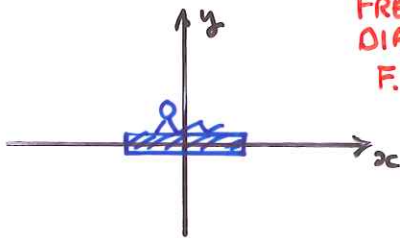
- DO TWO QUANTITATIVE RUNS \longrightarrow
(SAME APPLIED FORCE F)

- MEASURE FRICTION f

... REMEMBER 1ST LAW ...

t	x_1	x_2	$\Rightarrow x_{\text{ave}}$	$\pm \Delta x$
0	0	0	0	0
2	-	-	-	-
4	-	-	-	-
6	-	-	-	-
\vdots				

* ANALYSIS



FREE BODY
DIAGRAM
F. B. D.

$$\longrightarrow a_{\text{PREDICTED}} = \dots$$

PLOT x vs t^2 \longrightarrow $a_{\text{MEASURED}} = \dots$
WITH EXCEL

$$\left(x = \frac{1}{2} a t^2 \right)$$

* QUESTIONS...