


1. Prove that all objects regardlessly of their mass fall with the same acceleration (g) in the absence of air resistance.


$M \gg m$



$$a = \frac{-F_g}{M}$$

$$a = \frac{M \cdot g}{M}$$

$$a = -g$$



$$a = \frac{-F_g}{m}$$

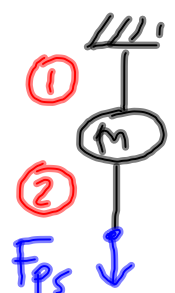
$$a = \frac{-m \cdot g}{m}$$

$$a = -g$$

$\uparrow y$

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CASE A

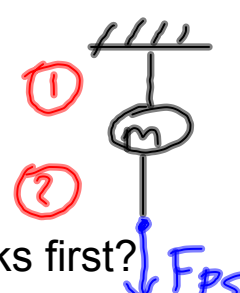


Which string breaks first?

F_{PS} is applied as a fast jerk.

string 2 breaks first

CASE B $m = \text{HUGE}$



Which string breaks first?

F_{PS} is applied as a gradual pull.

string 1 breaks first

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