Force & motion

If you plot a graph of $m_h g$ against the acceleration a, what does the slope of your graph represent

Take:

The mass of the glider (or cart) M_g

The hanging mass m_h

The added mass m_a

○ m_a

◉ $(m_h + M_g + m_a)$
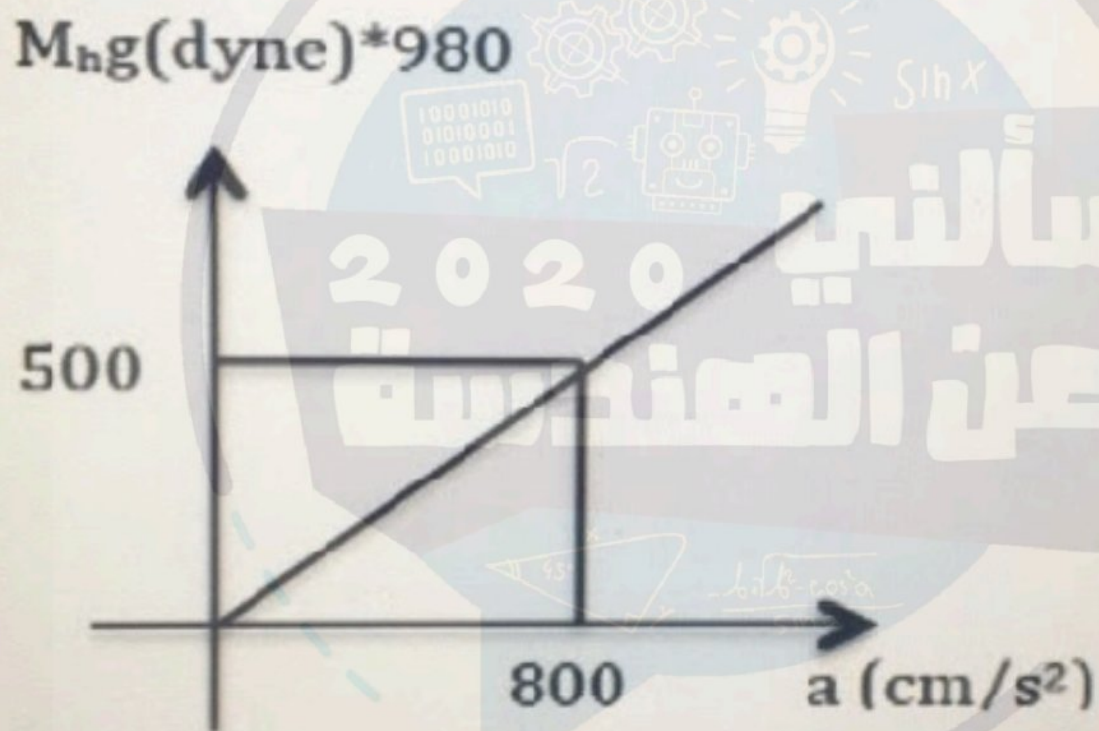
○ $(m_h + m_a)$

○ M_g

○ $(m_h + M_g)$

Clear my choice

[I]

$$mhg = (ma + Mg + mh) a$$

Slope: $mh + ma + Mg$

In the Force and Motion experiment: use the information from the graph
shown. When $(m_a + m_h)$ was kept constant and equal to 460 g, we got the graph
shown in the figure. The mass of the cart m_c (in g) is:

$M_h g(\text{dyne})*980$

500

800

$a\ (\text{cm/s}^2)$

○ a. 627200

[2]

$$\text{Slope} = ma + Mg + ma$$

$$ma + mh = 460 \, g$$

$$\text{Slope} = \frac{(500 - 0) \times 980 \, \text{dyne}}{(0 - 800) \, cm/s^2}$$

$$= 612.5 \, g$$

$$Mg = 612.5 \, g - 460 \, g$$

$$Mg = \underline{\underline{152.5 \, g}}$$