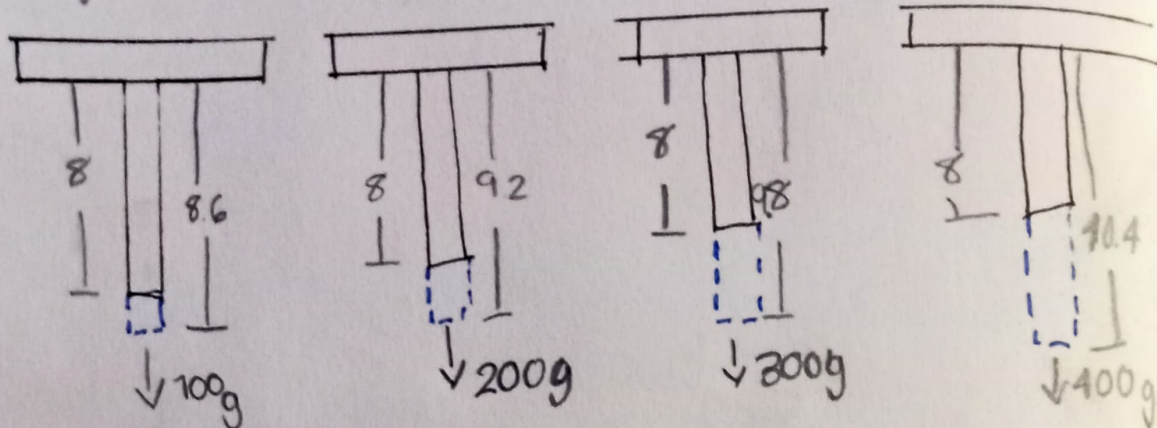


5. Se sostiene verticalmente una cinta de goma de 3 x 1.5 mm de sección transversal, observe la tabla de cargas y longitudes con ello determina el Modulo de Young

*Dibujos



AREA TRANSVERSAL = $3 \times 1.5 \text{ mm} = 4.5 \times 10^{-6} \text{ m}^2$

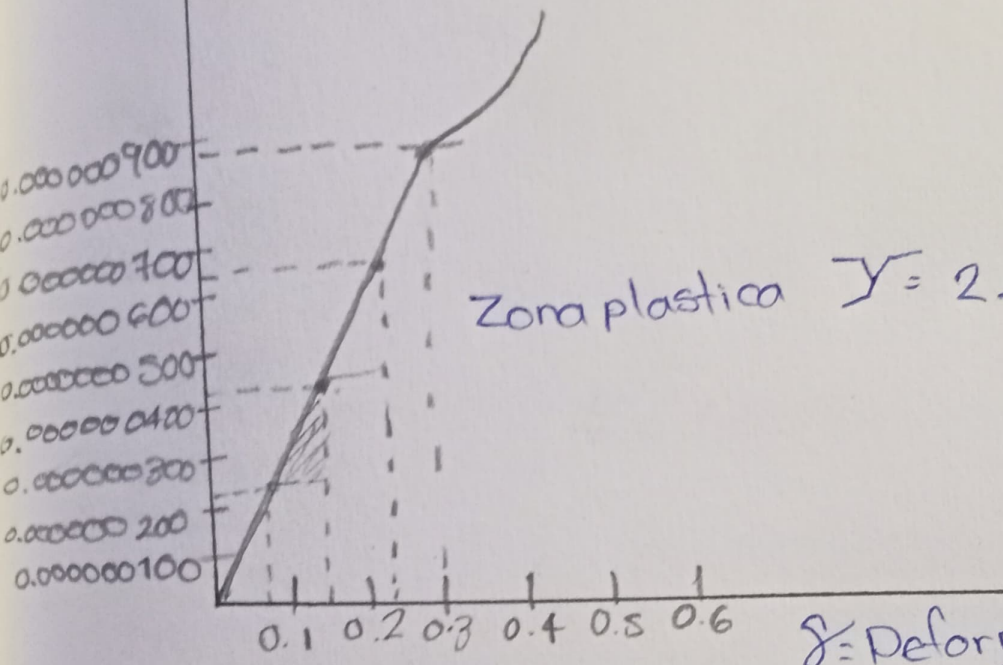
Carga (g)	0	100	200	300	400
Longitud (cm)	8	8.6	9.2	9.8	10.4

$g = 9.81 \text{ m/s}^2$

Carga	FUERZA = $F = m \cdot g$	$S = F/A$	$\delta = \frac{\Delta L}{L_0}$	$Y = \frac{F}{\delta}$
100g 0.1kg	$0.1 \text{ kg} \times 9.81 \text{ m/s}^2$ 0.981 N	$0.981 \text{ N} \div 4.5 \times 10^{-6}$ $= 0.000000218$	0.075	$0.000000218 / 0.075$ $= 2.906 \times 10^6$ N/m ²
200g 0.2kg	$0.2 \text{ kg} \times 9.81 \text{ m/s}^2$ 1.962 N	$1.962 \text{ N} \div 4.5 \times 10^{-6}$ $= 0.000000436$	0.15	$0.000000436 / 0.15$ $= 2.906 \times 10^6$ N/m ²
300g 0.3kg	$0.3 \text{ kg} \times 9.81 \text{ m/s}^2$ 2.943 N	$2.943 \text{ N} \div 4.5 \times 10^{-6}$ $= 0.000000654$	0.225	$0.000000654 / 0.225$ $= 2.906 \times 10^6$ N/m ²
400g 0.4kg	$0.4 \text{ kg} \times 9.81 \text{ m/s}^2$ 3.924 N	$3.924 \text{ N} \div 4.5 \times 10^{-6}$ $= 0.000000872$	0.3	$0.000000872 / 0.3$ $= 2.906 \times 10^6$ N/m ²

$\delta: 8.6 - 8 = 0.6 / 8 = 0.075$
 $9.2 - 8 = 1.2 / 8 = 0.15$
 $9.8 - 8 = 1.8 / 8 = 0.225$
 $10.4 - 8 = 2.4 / 8 = 0.3$

σ = Esfuerzo



Zona plastica $\sigma_y = 2.906 \times 10^{-6} \text{ N/m}^2$

ϵ = Deformacion unitaria,