Changing the exponent:

$4.2 \times 10^{6} = 42 \times 10^{5}$

$1.8 \times 10^{-5} = 0.18 \times 10^{-4}$

$7.9 \times 10^{-7} = 79 \times 10^{-8}$

$52.5\ mm = 52.5 \times 10^{-3}$

5.25×10^{-2}

Metric Conversions

mega	kilo	hecto	deca	base	deci	centi	milli	micro
M	k	h	da	g / m	d	c	m	μ
10^6	10^3	10^2	10^1	10^0	10^{-1}	10^{-2}	10^{-3}	10^{-6}
					$\left(\frac{1}{10^1}\right)$	$\left(\frac{1}{10^2}\right)$	$\left(\frac{1}{10^3}\right)$	

move decimal to right ($\times 10^?$) →

← move decimal to left ($\div 10^?$)

You can do the following to convert units:

1. Slide decimal
2. factor labeling
3. use the prefix (if going to base unit)

29. 4008 g = mg

① Slide decimal 3 dec to right

4008 g = 4008000 mg

② factor labeling:

$$x\ mg = 4008\ g \left(\frac{1000\ mg}{1\ g}\right)$$

← conversion factor

$x\ mg = 4008000\ mg$

③ doesn't apply. (not going to base unit)

30. 48 mL = ? L

① move decimal 3 places to left

48 mL = 0.048 L

② factor labeling:

$$x\ L = 48\ mL \left(\frac{1\ L}{1000\ mL}\right)$$

$x\ L = 0.048\ L$

③ use the prefix

m

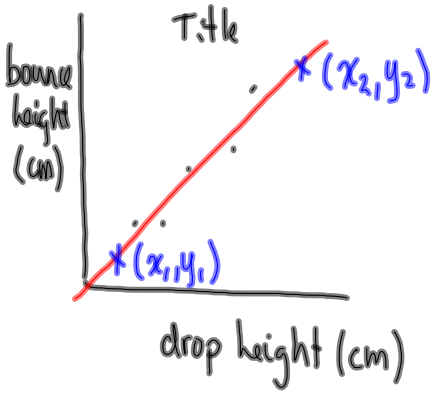
$48\ mL = 48 \times 10^{-3}\ L$

$= 4.8 \times 10^{-2}\ L$

31. 239 mm = 23.9 cm

32. 38 kg = 38000000 mg

Bounce that Ball



$m = \frac{\Delta y}{\Delta x}$

$m = \frac{y_2 - y_1}{x_2 - x_1}$

golf ball: 0.8, 0.7, 0.75

tennis ball: 0.5,

bouncy ball: 0.97

$y = mx + b$ ← calculate

tennis ball: $y = 0.5x + 0.2$

$h_b = 0.5h_d + 0.2$

9. Significance of Slope:

Any slope is the ratio of the change in y to the change in x.

More specifically, the ratio of the change in bounce height to the change in drop height.

$\text{slope} = \frac{\Delta h_b}{\Delta h_d}$ $\frac{(\text{cm})}{(\text{cm})}$ units.

tennis ball: $m = 0.5$ $\left(\frac{5}{10}\right)$ ← Δh_b, ← Δh_d

10. y-int = 0 (theoretically)