Metric Conversions

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

move dec to right $(\times 10^?)$

move dec to left $(\div 10^?)$

29. 4008 g = ____ mg

① Slide the decimal (3 places to right)

4008 g = 4008000 mg

② use the prefix (if going to base unit)

N/A

③ factor labelling (use conversion factors)

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

What you need to find — What you know — conversion factor.

$x\ mg = 4008006\ mg$

30. 48 mL = ? L

① slide decimal (3 dec places to left.

48 mL = 0.048 L

② use the prefix (if going to base unit)

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

m → $\times 10^{-3}$

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

③ factor labelling

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

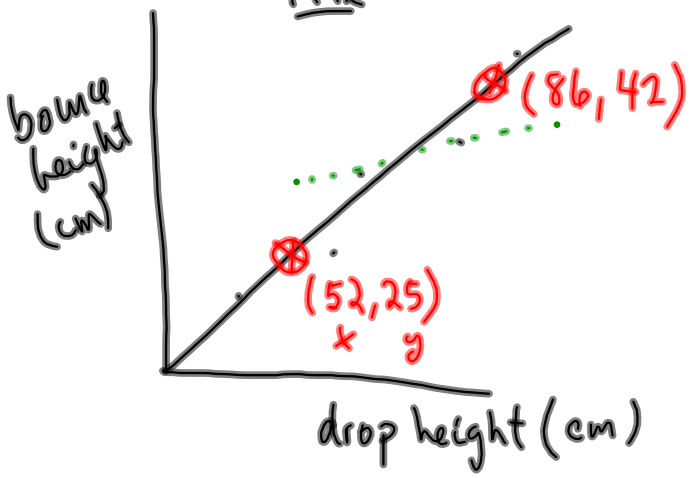
$x\ L = 0.048\ L$

31. 239 mm = 23.9 cm

32. 38 kg = 38 000 000 mg

Bounce that Ball

Title



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

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

$$m = \frac{42 - 25}{86 - 52}$$

$$m = \frac{17}{34}$$

$$\boxed{m = 0.50}$$

$$y = mx + b$$

$$25 = (0.50)(52) + b$$

$$25 = 26 + b$$

$$b = -1$$

$$y = mx + b$$

$$y = 0.50x - 1$$

$$h_b = 0.50 h_d - 1$$

$$\text{Slope} = \frac{\Delta y}{\Delta x} = \frac{\text{change in bounce height}}{\text{change in drop height}}$$

$$0.5 = \frac{5}{10}$$ ← for 10 cm increase in drop height there will be a 5 cm increase in bounce.