

# Significant Digits / Figures

When you make a measurement there should only be 1 uncertain (guessed) digit

You use a 30 cm ruler with mm marks on it and you record a measurement to be:

27.72597834 cm  
 ↑ mm    ↑ guess this (only)

27.73 cm    or    27.72 cm  
 certain    ↑ uncertain

When counting s.d.s you count the certain digits and the one uncertain digit

↓  
 guessing between the smallest division

## Basic Skill Sheet

17. 2.9910 m → 5sd  
 certain uncertain

19. 0.00670 kg → 3sd  
 placeholders (don't count)    6.70 × 10<sup>-3</sup> kg    (leading zeros are not sig)

20. 809 g → 3sd    (zeros between non-zero digits count)

18. 5600 km → ambiguous (2, 3, or 4?)

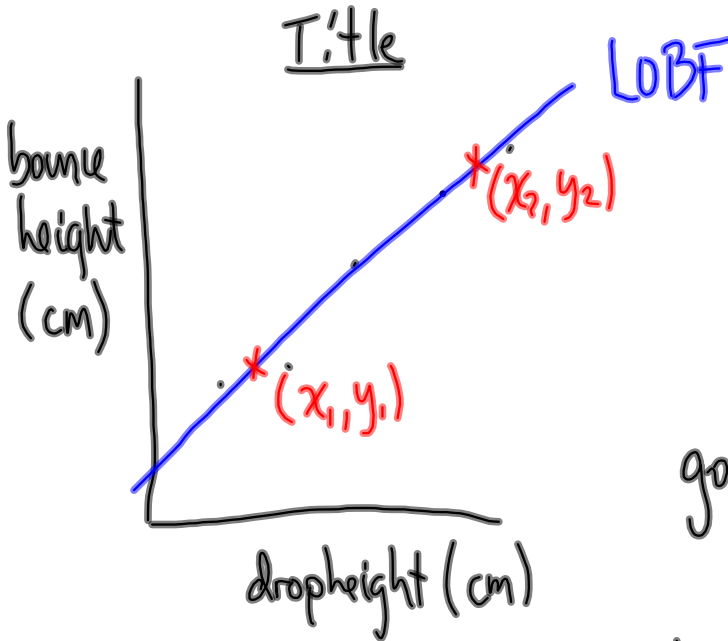
Best to use Scientific notation (depends on the preciseness of the measuring instrument)

5.6 × 10<sup>3</sup> km → 2sd

5.60 × 10<sup>3</sup> km → 3sd

5.600 × 10<sup>3</sup> km → 4sd

# Bounce that Ball



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

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

golf ball.

0.75, 0.83, 0.70

tennis ball

0.6 (not as bouncy)

bouncy ball

0.789

$$y = mx + b$$

↑ solve

$$y = 0.6x + 0$$

$$h_b = 0.6h_d$$

← Sub in 50cm and 125cm

$$\frac{0.6 \text{ cm}}{1 \text{ cm}} = \frac{6 \text{ cm}}{10 \text{ cm}}$$

For every 10cm increase in drop height, there will be a 6cm increase in bounce height