

## SIX KEY RULES ON SIGNIFICANT FIGURES

- 1) Count the number of digits:  
2355 = 4 significant figures  
124.302 = 6 significant figures
- 2) Don't count "following zeros":  
2300 = 2 significant figures  
10000 = 1 significant figure
- 3) Don't count "leading zeros":  
0.0033 = 2 significant figures
- 4) But...count "following zeros" if they're made significant with a decimal:  
2300. = 4 significant figures  
100000. = 6 significant figures
- 5) And...count "following zeros" in numbers less than 1  
0.3300 = 4 significant figures
- 6) Finally, numbers constants in equations and conversions have unlimited precision, for example the "4" and pi in the following equation:  
Area = 4  $\pi$  R<sup>2</sup>

## THREE STEPS FOR SIGNIFICANT FIGURES IN CALCULATIONS

- 1) Plug your numbers into your calculator as normal.
- 2) If you have to stop at some intermediate step, record your answer with excessive significant figures.
- 3) When you are completely finished, round your value to the same number of significant figures as the significant figures in your LEAST PRECISE input number.

Example: A cylinder has a diameter of 14.233 cm, and a height of 18 cm.  
What is its volume?

$$\begin{aligned}\text{Volume} &= (\pi/4) \times D^2 \times H \\ &= (3.1416/4) \times (14.233 \text{ cm})^2 \times 18 \text{ cm} = 2863.88 \text{ cm}^3 \\ &= 2900 \text{ cm}^3\end{aligned}$$