## **SIGNIFICANT FIGURES - Mathematical Operations**

**ADDITION AND SUBTRACTION:** When adding or subtracting numbers, count the NUMBER OF DECIMAL PLACES to determine the number of significant figures. The answer cannot CONTAIN MORE PLACES AFTER THE DECIMAL POINT THAN THE **SMALLEST NUMBER OF DECIMAL PLACES** in the numbers being added or subtracted.

## **Example:**

23.112233 (6 places after the decimal point)

1.3324 (4 places after the decimal point)

+0.25(2 places after the decimal point)

24.694633 (on calculator)

(rounded to 2 places in the answer) **CO**. **UK** in the answer. 24.69

*Note: There are 4 significant figures in the answer.* 

## **MULTIPLICATION**

When multiplying or (2) NUMBER OF SIGNIFICANT FIGURES. numbers, compthe The arsyste cannot CONTAIN 2021 **GNIFICANT FIGURES THAN THE NUMBER** BEING MULTIPLIED OR DIVIDED with the LEAST NUMBER OF SIGNIFICANT FIGURES.

**Example:** 

23.123123 (8 significant figures) x 1.3344 (5 significant figures) 30.855495 (on calculator) (rounded to 5 significant figures) 30.855

## **IN THE LABORATORY:**

Masses should always be recorded to as many places after the decimal point as are read off the balance. Calculation of mass by difference using a tare should be reported to this same number of places. 10 mL Graduate cylinders should be read to the nearest .01 mL. 25 mL and 100 mL graduate cylinders should be read to the nearest 0.1 mL.